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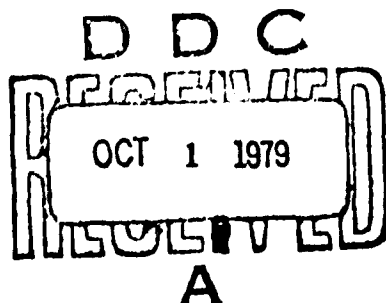
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TECHNICAL REPORT
NATICK/TR-79/035

**FOOD SERVICE SYSTEM OPINIONS,
FOOD PREFERENCES, AND
FOIL PACK FOOD RATINGS OF AIR FORCE
LAUNCH CONTROL FACILITY CONSUMERS**

by

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DRDNA-YBF

August 1979

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CONSUMER ATTITUDE SURVEY	FOOD	RATINGS												
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Survey objectives were: to update and supplement earlier consumer data, confirm or refute existing anecdotes about the Missile Feeding System, provide food preference information for menu planning, and measure acceptance of foil pack foods at mealtimes. Eight hundred Air Force Launch Control Facility consumers were surveyed at three Strategic Air Command Bases, using a combined consumer opinion/food preference questionnaire specifically developed for this System. Responses to the consumer opinion part of the survey revealed poor System performance with respect to quality of foil pack foods; perceived lack of variety														

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→ and portion size, particularly of short-order foods; and a high incidence of consumers taking their own food to duty with them, an indication that they rejected System-provided food. Food itself and the Site cook were considered very important to wellbeing and morale. Preference ratings for traditionally high-preference foods were higher than obtained in other recent surveys of Air Force personnel. Acceptance levels of foil pack foods as served at mealtimes was low.



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SUMMARY

During Spring 1978, 800 Launch Control Facility consumers were surveyed for their opinions of various aspects of food service and their food preferences. Consumers were stationed at three Strategic Air Command Minuteman Missile bases located in the Northern Plains area of the U.S. A new, combined consumer opinion and food preference survey questionnaire was designed to fit the special situation of this consumer group. Respondents represented 4 major job categories: combat crew officers; and enlisted personnel consisting of facility managers, security police, and cooks. Questionnaires were self-administered in on-base briefing sessions or when handed out by the NARADCOM survey team on visits to Launch Control Facilities.

Consumers generally regarded their food service system as performing poorly in key areas, according to the consumer opinion part of the survey. Among the salient findings: (1) foil pack foods were considered defective with respect to certain sensory attributes and were generally thought to be underseasoned and underspiced; (2) food in general was viewed as important and capable of making monotonous duty more tolerable; (3) consumers estimated they ate 50% of their authorized meals - they also estimated they ate 1.7 meals per day consisting wholly or partly of foil packs; (4) overall, more than half the consumers reported substituting food they brought with them for Launch Control Facility meals; however, at one base, the incidence of this practice was substantially lower; (5) consumers considered the site cook an important component of their food service system; and (6) breakfast was not only important as a highly-utilized meal, but also the concept of cooked breakfast items in foils was totally rejected.

Food preferences of this consumer group were similar to those measured with other Air Force populations, particularly in terms of rankings. High preference foods, however, were rated considerably higher than the same foods in past surveys. Possible reasons for this observation are given.

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PREFACE

The survey reported herein was conducted under Air Force Requirement 4-2 and financed with Food Technology Project funds. Project Task/Work Unit designations were BB/104, Food Processing and Preservation Techniques/Acceptance of Missile Site Food Service System. Project Officer was Dr. Gerald Silverman, Food Microbiology Group, Biological Sciences Division, Food Sciences Laboratory (FSL). The prime author of this report was Principal Investigator for the Food Acceptance Module which included the following tasks: missile food food service system survey questionnaire, food rating feedback system, and sensory quality panel training.

The authors greatly appreciated the outstanding, creative assistance from the following people in connection with the survey reported herein: (1) Statistician Nancy Cobean, now with Navy Station, Combat Systems, Newport, Rhode Island; (2) Programmer Peter Priori, General Services Administration; and (3) Summer Aide Paula Mesite, Worcester Polytechnic Institute.

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FOOD SERVICE SYSTEM OPINIONS, FOOD PREFERENCES,
AND FOIL PACK FOOD RATINGS OF
AIR FORCE LAUNCH CONTROL FACILITY CONSUMERS.

INTRODUCTION

Precooked, frozen, single-serve entrees; starches; vegetables; and desserts have been the major components of food service provided to Strategic Air Command (SAC) Minuteman missile personnel since 1970. These foods, hereafter referred to as foil pack foods, are processed in a central preparation facility at Francis E. Warren Air Force Base (WAFB) and packaged in aluminum foil trays with crimped-on cardboard lids, the inner surfaces of which are foil coated.

A production feasibility and consumer use evaluation commenced at WAFB in mid-1967 with a single squadron and continued until early 1969. In April 1969, SAC adopted this food system for its five other missile support bases. The present Foil Pack Kitchen facility became operational in late 1970 and began supplying the SAC Minuteman Missile bases. Ultimately, in 1971, Titan missile support bases were brought into the program. No further expansion has occurred since that time.^{1, 2} Missile Feeding System performance in general and foil pack foods in particular have been evaluated on four occasions. The earliest evaluation was an analysis of the foil pack operation,³ three consumer advantages were seen: (1) responsiveness to food preferences: the menu at the time consisted of 23 entrees, 8 starches, 9 vegetables, and 7 desserts, plus accompaniments such as vegetable salads, breads, beverages, etc.; (2) flexibility in selecting a meal from these food groups; and (3) increased satisfaction. Disadvantages cited were initial consumer resistance to the concept and a negative effect on the morale of the cooks who now only reheated foil packs rather than cooked a meal from raw to finished state. No direct consumer data were obtained to substantiate these opinions.

In another early study at one Minuteman Missile Base,⁴ combat crew members were surveyed about cook performance, dining area cleanliness,

¹R.A. Kluter. Trip Report. Food Sciences Laboratory, US Army Natick Research & Development Command, September, 1972 (Unpublished).

²H.L. Meiselman. Trip Report. Food Sciences Laboratory, US Army Natick Research & Development Command, September, 1972 (Unpublished).

³R.S. Smith, R.L. Bustead and M. Lynn. Analysis of the Precooked, Frozen Food Central Preparation Operation at F.E. Warren Air Force Base. Operations Research and Systems Analysis Office, US Army Natick Research & Development Command, Technical Report, April, 1971 (Unpublished).

⁴Foil Pack Evaluation, 804th Combat Support Group, Grand Forks Air Force Base, ND, January, 1972.

quality and quantity of food, and menu. Of nearly 1000 questionnaires collected, 77 percent indicated dissatisfaction with at least one of these areas. Investigators concluded that this high rate was attributable to: (1) cook performance—higher percentages of negative comments came from inexperienced cooks; (2) menu and bulk item shortages—due possibly to inexperience of cooks with inventories; (3) general dissatisfaction with foil pack food quality.

In a third study,⁵ NARADCOOM obtained consumer opinions of foil pack foods using self-mailing "passive feedback" cards distributed by cooks at Launch Control Facilities (LCF's). The open-ended responses to seven questions were classified as positive, neutral, or negative. Across all questions, about 48 percent of the comments were negative. Two years later, in a follow-up survey, this dropped to about 33 percent. There was, however, no appreciable increase in positive comments; the decrease in negative comments was offset by an increase in neutral opinions.

The fourth study⁶ involved all 6 SAC bases covered by Missile Feeding Operations. Its primary objective was economic analysis of present and alternative food service systems. Data were obtained by observation, interviewing, and questionnaires. Among the consumer-related findings bearing upon the economic concern of cost per meal were: low user utilization of and satisfaction with LCF meals, low morale and low productivity of cooks, and a high percentage of personnel who brought their own food to Launch Control Facilities, especially BAS personnel.

Objectives of the present survey were: (1) to update and supplement past data collection efforts by means of a thorough-going survey of all factors of potential importance to consumer satisfaction with LCF food service; (2) to confirm or refute existing anecdotes about the system; and (3) to provide guidance for menu planning, obtain food preference information not previously available from Air Force personnel subsisting in this system. An added objective was to measure acceptance level of individual foil pack foods as served at LCF's and test a system for obtaining consumer feedback whenever such information is needed.

⁵D. L. Maas, L. E. Symington and H. L. Meiselman. Customer Opinion of the Frozen Foil Pack Used in the Minuteman Missile Food Service System. Letter Report, Food Sciences Laboratory, US Army Natick Research & Development Command, December, 1975.

⁶Command Management Improvement Study - Missile Feeding Operations, FC 4671: Final Report. DET 18, 3904th Management Engineering Squadron (SAC), Grand Forks Air Force Base, ND, 1976.

METHODS

Consumer Survey Phase

Development of the Questionnaire. A new questionnaire was needed because the content of existing ones was designed to assess consumer opinions of garrison food service systems. Many areas of concern in the present system were different from those of a garrison system. For examples: (1) if LCF consumers choose not to utilize food service available to them, there is no private-sector food service establishment available to them. They cannot leave the LCF, and no facilities are conveniently available if they could leave. Thus, many consumers resort to taking some of their own food from home to the LCF's, and the concern becomes one of determining the incidence of food taking and specific foods taken: (2) the concern of menu variety is different since a 42-day cycle garrison menu numerically has greater variety than the LCF menu which consists of considerably fewer items and is invariant regardless of time of year, weekends or weekdays, etc.

Specific items and issues to be covered by the questionnaire were identified from earlier systems and LCF site visits at Minuteman Missile bases (see Introduction for references), anecdotes about the food service system and foil pack foods related by food service personnel and consumers, and other project objectives, such as the introduction of foil pack breakfast items.

The resulting questionnaire is reproduced in Appendix A. Instead of separate booklets for the Consumer Opinions and Food Preference parts of the survey, they were combined in one booklet.

To the extent possible, questions from the 1972 consumer opinion questionnaires were used to facilitate comparison with past responses of Air Force consumers.^{7, 8} The following questions in the present survey were the same or similar to the previous survey: Question 14: General areas of concern; 15: Eating environment (revised in item content because some features of garrison food service were not present at LCF's; 17: Portion Size; and 19: Menu variety (scale was changed).

Food Preference Measurement. The limited LCF menus and short-term tours of duty were two reasons that a revised food preference survey format was needed. The 378- and 200-item food lists used in previous

⁷ L.G. Branch, L.E. Symington and H.L. Meiselman. The Consumer's Opinion of the Food Service System: The 1973 Minot Air Force Base Survey. Technical Report, Food Sciences Laboratory, US Army Natick Research & Development Command, TR 74-7-FR, June, 1973. AD 760590

⁸ L.G. Branch, H.L. Meiselman and L.E. Symington. A Consumer Evaluation of Air Force Food Service. Technical Report, Food Sciences Laboratory, US Army Natick Research & Development Command, TR 75-22-FSL, August, 1974. AD A003 825.

surveys were based upon 42-day cyclic garrison menus. A new list was developed, starting with the F.E. Warren AFB stock list that included foil pack foods and other line items. To this was added high preference items determined from previous Air Force Surveys that were also considered technically feasible in the LCF Food Service System - these included items that might be produced as foil packs, short order items, and Mexican foods. The resulting list, including duplicated and attention-check nonfoods, numbered 146 items.

Since LCF consumers subsist for short periods, the "frequency wanted" part of the preference survey was inappropriate. Instead, it was decided to have consumers indicate whether or not each item should be on the LCF menu, in addition to indicating degree of liking or disliking on the 9-category hedonic scale used in previous surveys.

Selection of Air Bases. Four criteria were used: (1) a large potential survey population was available; (2) bases were heavy users of foil pack foods as judged by number of units typically ordered; (3) different local food service system operating policies, and (4) as wide a geographical dispersion as possible.

As observed by NARADCOM project personnel, the three bases selected differed considerably with respect to their Missile Feeding Operations. One operated a "no frills" system close to the original intent of the frozen foil pack meal program—food taking to LCFs was not officially allowed. Another encouraged its LCF cooks to be creative in their efforts and provided additional line items to facilitate this; also, other convenience frozen foods not produced in foil pack were being considered for addition to the menu. Overall, their policy was consumer oriented. The third base's policy was similar to the first, but refrigerator space was provided in the dining/lounge area for foods consumers brought with them.

Sampling of Respondents. It was desired to give everyone who lived and worked at LCFs an opportunity to express their opinion about the food service systems. This was done by requesting each of the three airbases to give the NARADCOM survey team access to all available personnel during four-day visits. Personnel were intercepted on-base at regular training sessions or at outbriefings prior to departure for LCFs. In addition, all possible LCF sites were visited except for a few remote from the main bases. At the sites, survey questionnaires were distributed. Time did not always permit waiting for all questionnaires to be completed since personnel had other duties to perform. In these cases, respondents were requested to return them to site cooks who brought them to the Food Services Office when reporting in from LCF duty.

Bases were visited between the end of March and mid-June 1978. At the time of the survey, a-la-carte pricing of individual or accessory food items for BAS consumers was about to be implemented or anticipated. No questions covering this fact or eventuality were included in the surveys.

Foil Pack Food Acceptability Measurement

This effort was completely separate from the surveying. In May 1978, the three bases selected for the survey were asked to obtain ratings for foil pack foods served at their LCFs. The following are the instructions given to cooks for distribution of LCF Food Rating Sheets:

1. You will be asked at an out-briefing to take 500 Food Rating Sheets to your LCF and to distribute them during a specified 30-day period.
2. Upon your arrival at the LCF, place them on trays whenever anyone orders a meal consisting partly or wholly of foil pack foods. Very likely, most will be handed out at the Supper meal.
3. Only one Food Rating Sheet is needed if you serve up to three different foil pack foods. If you serve more than three different foil pack foods, provide one extra sheet.
4. Note that your role is to make sure the Food Rating Sheets are handed out. Once distributed, it is completely up to the consumer to fill them out and to mail them. Please make no attempt to collect them.
5. If your supply reaches less than 100 (one bundle) during the 30-day distribution, please request another bundle from your Food Service Office to avoid running out. Some LCFs may be visited more frequently than others, for example, by maintenance crews or other special details who order foil pack foods. Their opinions are wanted too, in addition to the people who live and work at the LCF during the entire duty period.
6. Thank you for your cooperation in this effort. The data obtained from these Food Rating Sheets will help food service system planners learn what is good and what is bad about foil pack foods.
7. Please do not hesitate to bring any questions you may have about these Food Rating Sheets to the attention of your Food Service Office.

The LCF Food Rating Sheet is reproduced in Appendix D. The self-mailer format was developed specifically for the evaluation of foil pack foods. The rating scales were from the NARADCOM-developed Consumer Opinion Card.⁹ Although the primary objective was to obtain consumer ratings on foil pack

⁹D. Waterman, N. Cobean and H.L. Meiselman. Evaluation of Five Food-Rating-Feedback Cards: Final Report. Technical Report, Food Sciences Laboratory, US Army Natick Research & Development Command, TR 76-58-FSL, March, 1976. AD A032 580.

foods prior to making specific processing changes at the Foil Pack Production Facility, an important secondary objective was to assess the success of a food service system administered consumer feedback procedure. Response rate based upon estimated numbers of foil pack meals served was the criterion. In a system with widely-scattered consumers, the only economically-viable procedure was felt to be a self-administered one that relied on consumers to return, voluntarily and anonymously, their opinions to a location other than their own Base Food Services Office.

September 1978 Foil Pack Breakfast Item Test at Francis E. Warren AFB

One of the FY78 objectives was pilot production and consumer evaluation of precooked frozen breakfast items packed in existing foil containers. Earlier, six product prototypes were developed in a contract with Western Regional Research Laboratory (WRRL), USDA. All were egg-based or contained eggs as a principal ingredient. Of these, three were chosen for the evaluation: french toast, scrambled eggs, and puffy omelet. The omelet item was modified to a ham and cheese omelet with the WRRL-developed white sauce. A fourth item, pancakes, was procured commercially and packed in the foil containers. All modification and processing of these products was performed by NARADCOM food technologists in the Food Engineering Laboratory's Pilot Plant since production capability was not available at the Foil Pack Production Facility. Products were packed in insulated cartons with dry ice and air-shipped to Francis E. Warren AFB's Central Distribution Section. Subsequently, they were placed in 5 LCFs for the evaluation.

Cooks assigned to the affected LCFs were instructed prior to departure to their sites. They were told: (1) the reheating temperatures and times; (2) the test items were to be offered free of charge; no other choices, such as other eggs to order or breakfast meats, were to be offered; (3) to offer the test items on their third or "changeover" duty day when they normally do not offer cooked breakfast items; and (4) to pass out and collect the LCF Food Rating Sheet (Appendix D) whenever foil breakfast items were served. Completed Rating Sheets were returned to NARADCOM for tabulation and statistical analysis.

Consumer Evaluations of New Foil Pack Items

Work in this area continues through FY79. Since it is presently incomplete, it will be covered in a separate letter report.

RESULTS AND DISCUSSION

Part I - Consumer Opinion Survey

Consumer responses are discussed by survey question number. Detailed crosstabulated data are given in Appendix B tables. Summaries of these data are highlighted, as appropriate, in the tables accompanying this text. Where given, numbers of responses to parts of questions do not total 800 because of incomplete questionnaires.

Questions 1 through 6 and 20. Description of the LCF Population Sample.

Survey sample characteristics are summarized in Table 1. Computed numbers of personnel needed to staff LCFs at each base and for each job group were the basis for the "percent surveyed" statistic. This ranged from a low of 45 percent to a high of about 70 percent. Since respondents were asked to bracket rather than record their exact ages, a mean age could not be computed. However, distribution of the age brackets indicated the LCF population was more senior than the all-enlisted Air Force populations of past surveys. This was due to the presence of officers and senior NCOs in the present sample. Residence/marital statistics and distribution of time in the Air Force were other indicators of seniority. Regarding LCF duty, however, a clear majority of respondents were relatively new to this assignment. As to rations status, nearly one-third of the officers at two bases said they were not BAS. Since the question has been asked exactly as on past surveys, misunderstanding was unlikely - if the non-BAS status was true, it may have been temporary. A detailed survey population description and rations status crosstabulated by base and job group are given in Appendix B, Tables B-1 and B-2.

Question 7. Dietary Habits (Appendix B, Table B-3).

Although this topic was not a critical area of concern of this survey, the questions were asked to determine whether or not a significant segment of LCF consumers were concerned about their diet. If so, such information could guide future menu decisions.

In summary, LCF consumers were (1) not trying to gain weight; (2) were concerned slightly about their weight; but (3) not altering their dietary habits to maintain or lose weight - on the average, there was a tendency to disagree that they were taking the steps suggested by question items 2 through 5. It was noted that standard deviations for each group cross-tabulated generally exceeded two scale points. Thus, there were subsamples of each group that agreed or disagreed more strongly than indicated by the mean values reported.

TABLE 1

DESCRIPTION, LCF POPULATION

QUESTIONNAIRES COLLECTED: 800

Estimated Percent Surveyed:

- 45 to 70% at 3 air bases
- 50 to 75% of 4 major job classes

Age

- 57% less than 25 years old
- 21% from 26 to 30

Residence/Marital

- 53% live on-base, 47% off-base
- 60% married, 40% single

Time in Air Force

- 50% less than 3 years
- 36% from 4 to 12 years

Length of LCF Duty

- 78% less than 3 years
- 21% from 4 to 12 years

Rations Status

- 70% BAS
- 30% Mealcard

Question 8. Frequency of Eating Breakfast (Appendix B, Table B-4).

About 54 percent of all respondents reported eating breakfast frequently or always. Compared to their BAS counterparts, mealcard enlisted personnel (security police and cooks) reported using breakfast most frequently. Combat crew and facility manager responses were distributed evenly on the frequency scale. For unknown reasons, BAS cooks reported eating breakfast considerably less frequently than mealcard cooks. Breakfast consumption patterns also differed among bases. For example, nearly half of one base's consumers reported eating breakfast always compared to considerably lower percentages at the other two bases.

Question 9. How Often Foods Brought by Consumers Are Substituted for LCF Meals (Appendix B, Table B-5).

Over all respondents, the breakdown was as given in Table 2. A significant segment reported relying on the LCF food service system while on duty, as indicated by the "never" responses. On the other hand, a larger segment reported substituting their own food for one or more meals while on duty. The responses suggested that virtually everyone depends on the LCF to some extent for food as evidenced by the low percent of responses to the "always" category. Probably, consumers find it infeasible or inconvenient to provide themselves food for an entire duty period which for above-ground personnel is three days.

TABLE 2
FREQUENCIES OF FOOD SUBSTITUTION, ALL RESPONDENTS

Category	Number	Percentage
Never	308	39
Seldom (1 meal per duty period)	188	24
Occasionally (more than one meal per duty period)	171	21
Frequently (2 meals per day)	110	14
Always (never eat LCF food)	15	2

Although consumers in this question claimed to replace whole meals with the foods they bring to duty with them, responses to question 10, discussed next, indicated snack and luncheon items are most frequently taken. Thus, it is possible that these foods may supplement LCF-provided foods such as foil packs.

In interpreting consumer frequency estimates in terms of possible lost sales of foil pack foods, note that when combat crew members substitute their own food for an LCF meal, it would amount to one of possibly four meals (including late supper) that might be eaten while on duty. For all others, the loss might amount to one meal out of 12. Over one-third of the combat crew respondents reported substituting their own food occasionally or frequently; this could mean 2 out of the 4 meals they might eat in 24 hours.

Crosstabulations revealed that higher percentages of mealcard personnel never substituted their own food compared to their BAS counterparts. At one base, BAS personnel indicated considerably higher utilization of their LCF food service than at the other two bases. At most levels of substitution, percentages of BAS were generally higher than mealcard personnel.

Question 10. Foods Taken to LCFs (Appendix B, Table B-6).

The table indicates the percent of each consumer segment who reported taking food to LCFs and average numbers of items mentioned for each food group. Over the entire consumer sample, most frequently taken food groups were beverages, snacks, fresh fruits and vegetables, sandwiches and main meal items. Crosstabulation revealed, however, notable differences in percentages of respondents taking these foods. Of the job groups, the highest percentages of personnel taking foods were combat crew members, with the exception of main meal items. This may reflect not only the unavailability or infrequent availability of these foods in some base systems but also the problem of delivering them conveniently to the underground capsule. Furthermore, taking these items is made convenient by the provision of small refrigerator units in the capsules. Consumers at one of the bases reported a very low incidence of taking these food groups compared to the other two bases. This outcome was likely due to the efforts of the base's food service system to provide these items by including them in the line of foods available through the Central Distribution Section (CDS). At the other two bases, they were available through vending machines, occasionally placed on menus, or not available at all.

Other food groups were not important as far as food-taking was concerned. Especially notable was the low incidence of taking breakfast foods. This was further evidence of the high utilization rate of the breakfast meal at LCFs as reported for Question 8.

Table 3 presents the three most frequently-mentioned foods under each of the five most important food groups. Specific items mentioned and relative frequencies were similar among the three bases. Numbers of specific foods mentioned for one of the three bases were small because of the overall low frequency of mentions. The first and sometimes second most frequently mentioned foods, particularly at the other two bases, represented a sizeable consumer segment. Since write-in questions tend to discourage responses, the percentage of consumers taking these items may actually be greater. The write-in data are additional evidence of the infrequent availability or

unavailability of these items at LCFs. Strongly suggested here is that a higher level of general consumer satisfaction with LCF food service would be achieved if these foods were always available.

TABLE 3
MOST FREQUENTLY-TAKEN FOODS AND NUMBERS OF MENTIONS

Base	Beverages		Snacks		Fresh Fruits & Vegetables		Sandwiches		Main Meal	
F. E. Warren (N=351)	Soda (not specific)	103	Potato Chips	113	Apples	112	Lunchmeat	44	Steak	47
	Coke	62	Cookies	43	Oranges	91	Ham	23	Chicken	25
	Pepsi	31	Candy	36	Bananas	33	Bologna	20	Hamburger	16
Malmetrom (N=206)	Soda (not specific)	31	Cookies	10	Apples	21	Peanut Butter	7	Roast Beef, Steak, Fish	3
	Tea	11	Cake	7	Oranges	16	Lunchmeat	5		
	Diet Soda	8	Pies & Pudding	3	Carrots	8	Bologna, Cheese, Tuna	4	Others Less Frequently	
Grand Forks (N=241)	Soda	49	Potato Chips	49	Apples	47	Ham/ Ham & Cheese	19	Hamburger	20
	Tea	18	Cookies	24	Oranges	42	Lunchmeat Bologna	11	Chicken	18
	Diet Soda	15	Peanuts/Nuts	16	Carrots	12	Tuna	8	Steak	15

Question 11. Reasons Consumers Bring Their Own Foods to LCFs (Appendix B, Table B-7).

The strongest reason given for food-taking to the LCFs was "foods from home taste better" which was reinforced by strong agreement with the statement that "LCF foods don't taste good". There were differences among bases in extent of agreement about "no food for snacks", again reflecting differences in base operating policies. Job group differences occurred with the "fast service not available" and "long wait before food is ready" issues. Cooks and facility managers disagreed slightly with these statements, suggesting they feel they have more ready access to food than the other groups who tended to agree.

Although consumers' past verbal comments and the food taking data in Table 3 suggested otherwise, there was only a slight tendency to agree with "the best liked foods are unavailable" statement. Perhaps quality and frequency of availability are the more important areas of concern with foods that are now available. The "BAS goes farther with own food" statement was a non-issue at the time of this survey which was conducted just prior to the implementation of a-la-carte item pricing at LCFs.

Mealcard personnel also responded but presumably were not in a position to make this value judgement. Nevertheless, there was no difference in responses between BAS and mealcard consumers. Although there was slight agreement that "menu variety is limited", this also did not seem a compelling reason for food-taking. Finally, there was strong disagreement that "bringing own food is prohibited." This seemed surprising inasmuch as base food service systems say they prohibit this practice or, at the very least, do not encourage it. SAC Regulation 146-1 (April 1977) discourages the practice by indicating that only CDS-distributed foods may be stored in LCF Kitchen refrigerators.

Question 12. Percentage of LCF Meals Eaten.

Distribution of all LCF consumer responses is given in Table 4. The percentage of respondents reporting not eating LCF meals during a typical duty period agreed with the percentage reporting they always substitute their own food for LCF meals in question 9. On the other end of the scale, however, a considerably lower percentage estimated complete reliance on LCF food service than claimed they never substituted their own food for LCF meals in question. This discrepancy may reflect reluctance of a segment of respondents to report food taking, the greater effort required to write in responses and/or other factors. Over 85 percent estimated they ate LCF meals 25, 50, or 75 percent of the time. Crosstabulations averaged scale category number rather than counted frequencies. Nevertheless, indications were that mealcard consumers utilized LCF food service more than their BAS counterparts, and that as a job group, security police were more frequent users than the other 3 groups. Although food taking and LCF meal utilization data were not estimated in the same units, they were to a great extent complimentary.

TABLE 4

ESTIMATES OF PERCENT LCF MEALS EATEN, ALL RESPONDENTS

<u>Estimate</u>	<u>Number</u>	<u>Percent</u>
1. 0 (None)	34	4.3
2. 25	270	34.1
3. 50	182	23.0
4. 75	223	28.2
5. 100	81	10.2

**Question 13. Consumer Estimates of Foil Pack Food Consumption
During Most Recent LCF Duty**

Table 5 indicates average numbers of meals consisting wholly or partly of foil pack foods recalled being eaten during the respondent's most recent LCF duty.

TABLE 5
FOIL PACK FOOD CONSUMPTION

Tabulated By	Meals Per Day
Job Group	
Combat Crew	1.6
Facility Manager	1.7
Security Police	1.7
Cook	1.4
Base	
F.E. Warren	1.8
Malmstrom	2.3
Grand Forks	1.9

In Table 5, foil pack food consumption was converted to a 24-hour-day basis for all 4 job groups. Consumers' self reports of the duration of their last duty confirmed that the virtually all combat members had been on duty 24 hours and all others for 72 hours with slight variance on both sides of these averages. Base data included both 24 and 72 hour duty personnel. However, there was clear directional indication of differences in foil pack food utilization with one base's consumers reporting somewhat higher utilization than the other two. This was the same base whose personnel in questions 9 and 10 reported low incidence of food taking. Job group self-estimates of foil pack food consumption were slightly higher than earlier anecdotal and computed estimates of daily foil pack meal consumption which were about 1 meal per day.

Question 14. General Areas of Concern (Appendix B, Table B-8).

Nine of the 10 areas rated in this question duplicated those asked in past Air Force surveys.¹⁰ Other aspects of these areas are detailed in responses to questions following this one.

Over all respondents, service by cook was highest rated and short-order variety lowest. Reaction was neutral towards military atmosphere, food quality, food quantity, and foil pack food variety. One base reacted slightly more favorably to convenience of serving hours and speed of service than the other two. Facility managers and cooks reacted more favorably to those two areas than the other two groups. This, in addition to their disagreement to statements about "non-availability of food service when wanted" and "long wait before food is ready" in question 11 suggested again that these individuals generally regard food as being more available to them than others do. Cooks generally reacted more favorably to the food-related areas than the other groups, a reflection perhaps of their feeling that they (1) do a good job and (2) have control over these features. Security police tended to be negative about food quality, quantity, and foil pack variety, whereas other groups were positive. Combat crew members rated their eating environment negatively, possibly because they must subsist in the same confined area in which they work. Finally, reactions were the same between rations groups.

Question 15. Reaction to Eleven Aspects of LCF Eating Environment (Appendix B, Table B-9).

Reactions were not extreme, and no differences were observed among bases or between rations segments. Among job groups, combat crew members considered their eating environment somewhat noisy, cramped, unattractive, and tense, while others reacted neutrally or somewhat positively to these environmental features. Very likely, these features contributed to the combat crew's overall negative reaction to eating environment in question 14. Over all respondents, the most positive reactions were to food-related features, lighting, and the scarcity of safety hazards. Slightly negative reactions were recorded for noise level and unattractiveness.

Question 16. Foil Pack Food Quality (Appendix B, Table B-10).

This question was a checklist of 26 situations, most of them negatively-associated defects that consumers might experience with foil pack foods. Among the quality defects, all respondents indicated that, occasionally or more frequently, foil pack foods are: unappealing in appearance, bland or tasteless (underseasoned), underspiced, tough and gristly (meat items), and mushy in texture. Cooks, however, rated these defects as occurring somewhat less frequently than the other job groups. In addition, they rated areas over which they had control more favorably, such as items out

¹⁰ See Reference 7.

of stock, serving foods on plates, serving food warm (not frozen or undercooked when served), and serving an excellent meal. Combat crew members indicated that food was occasionally cold when eaten compared to all others who considered this a seldom occurrence. This was evidence that the problems of serving food below ground have not been resolved, probably due to delays in bussing food there, defective holding equipment, and unforeseen delays before crew members can eat caused by the nature of their duty.

Among bases, differing policies of serving foods on plates versus in the original foil trays clearly emerged. The base's consumers who rated the "served in foil tray" scale the highest (frequency category) also rated "served on plates" the lowest. In actual practice, its LCFs were observed to present reheated foils on the plates; consumers would put their own food on the plates - this practice was said to keep foods hot before they were eaten. There were no differences in responses between BAS and mealcard personnel or any other between-base differences.

Question 17. Portion Size (Appendix B, Table B-11).

Consumers in the present survey indicated all food groups were underserved to some degree. In past Air Force garrison food service surveys, consumers indicated starches were overserved to a slight degree.¹¹ This is less likely with the foil pack system since portion sizes are fixed and second helpings cannot be conveniently provided (30-45 minute reheat) if authorized. Although differences among food groups were slight, foil pack meats and meats with other ingredients, along with short order items, were the most underserved. This was consistent among bases and rations groups. Among job groups, cooks perceived all food groups as less underserved than all others.

Question 18. Thirty Statements About LCF Duty and Food-Related Topics (Appendix B, Table B-12).

The statements covered 7 topics considered important to LCF consumers based upon opinions expressed in previous informal interviews as well as anecdotes about LCF food service. The agree-disagree scale format was designed to elicit the strength of feeling about topics which were difficult to assess when using other methods of questioning. Statements were constructed so that approximately equal numbers were expressed positively and negatively. In addition, they were randomly ordered in the questionnaire, Appendix A. For purposes of reporting, they were unscrambled under seven salient topics.

LCF Duty and the Importance of Food. The intent of these four statements was to measure attitudes of LCF consumers toward their work and to assess the importance of food under these conditions. Over all respondents, there was slight or greater agreement that their work was not appreciated

¹¹See Reference 7.

and that time passes slowly while they are on duty. At the same time, respondents were neutral about being an elite group in the Air Force and tended to be neutral or slightly negative about enjoying LCF work. On the latter statement, there were differences: consumers at one base were slightly positive about LCF work while the other two bases tended to be negative. Among job groups, facility managers said they enjoyed their work while all others tended to be negative. Food emerged as not only being important in this work environment but also being able to make monotonous duty more tolerable.

LCF Food in General. LCF consumers strongly disagreed that LCF food was as good as home cooked. However, consumers tended to disagree that LCF food was not worth eating but were neutral about liking LCF meals. It was significant that LCF consumers agreed they do not eat as well as their counterparts in the Air Force. While the strength of this feeling was not as great as earlier informal interviews suggested it might be, it nevertheless confirmed that LCF consumers felt they were being short-changed by their food service system. Lastly, consumers indicated pessimism that their questionnaire responses could lead to better food service at the LCFs.

Foil Pack Foods. Anecdotes about foil pack food quality being a joke were strongly confirmed by LCF consumers. It was clear, but feelings were not quite as strong, that foil pack foods could not provide the best food service in the Air Force, and that foil pack foods were not considered as high quality as either the best brand-name frozen meals or the more ordinary TV dinners. Optimism was expressed, however, that problems with foil pack foods could be solved. One interpretation of these attitudes would be that although a precooked frozen food system could never provide the best possible food service, there is sufficient room for improvement in foil pack foods to at least the level of commercially available frozen foods.

The LCF Cook. LCF consumers other than the cooks themselves, agreed strongly that cooks are important members of the LCF team and make LCF life easier. The cooks did not agree as strongly with these statements as all other respondents, an indication that their self esteem on the job was not as high as others' esteem of their role at the LCF. It was apparent from the strength of these responses that any efforts to eliminate the cook from the food service would be accompanied by a high risk of increased consumer dissatisfaction.

Of the 5 statements related to cook performance, there was general disagreement to statements that cooks are unkempt and cooks don't know their jobs. There was neutrality to slight agreement that meals are ready when wanted and that the cook does everything possible to deliver a meal in a hurry. One base, however, agreed with these statements somewhat more strongly than the two others. Regarding cooks doing their best under the circumstances, there was generally slight agreement; however, combat crew

officer's ratings were slightly lower. In all performance-related statements, the cooks rated themselves as doing better than the other consumer groups thought they were doing. This was consistent with responses to the previous survey questions of cook performance and foil pack food quality.

Breakfast. There was general disagreement that breakfast could be skipped without bad effects and general agreement about liking to eat a hearty breakfast. This tended to confirm the self-reports given earlier about frequency of eating breakfast. Responses to the other two breakfast statements were the most dramatic findings of the survey: consumers were in virtually complete agreement that breakfasts should always be freshly cooked and in virtually total disagreement about not minding if cooked breakfasts foods were foil packs. As with the cook and his/her role at the LCF, consumers would likely be extremely unhappy with any moves toward precooked frozen convenience breakfast foods in their food service system. The combination of a human being performing a service and at least one "prepared from scratch" meal per day may be extremely important to consumer satisfaction. Very likely, not even the highest possible level of foil pack breakfast food quality could replace a cooked-from-scratch breakfast.

Food Service Concepts. In past systems studies, at least three approaches to LCF food service were identified and analyzed economically.¹² These statements were a preliminary attempt to assess the viability of three such approaches with LCF consumers. Vending machines were strongly rejected. Attitude toward civilian contractors was neutral. In general, there was neutrality to slight rejection of the specific "do it yourself" concept described in the statement. On the latter, consumers seemed to prefer that someone provide the food service to them.

Question 19. Menu Variety (Appendix B, Table B-13).

As with the portion size question, differences among food groups were slight and there was close agreement in response by base, job group and rations status. It was clear, however, that all food groups tended to offer too few choices, and that short order foods offered the least variety of all. The latter result was not surprising, given the general practice of base food service systems of offering cooked short order items infrequently, such as once per week. Again, the response may reflect infrequency of serving, as much as a physical lack of choice, lack of inventory, or other factors.

Question 21. Additional Comments.

About 20 percent of all respondents wrote in additional comments. A majority of them brought up issues covered in survey questions and provided no additional information. Comments did serve, however, as an indicator

¹²See Reference 6.

of which areas were uppermost in respondent's minds. Although there was no main theme, topics covered most frequently were:

- Importance of cooks and good food
- Variable cook performance
- Monotony of foil pack foods, blandness, average quality, etc.
- Mealcard personnel desiring BAS status
- Negative anticipation of how total conversion to a-la-carte pricing system would work out
- Desire for more variety through periodic menu changes
- The need to emphasize good food and not necessarily balanced books, clean kitchen, cook inspections, etc.
- The importance of the cook preparing a good quality, fresh cooked breakfast, and also a breakfast on changeover day

Part II - Food Preference Survey

LCF consumer preference ratings for the 146 food names surveyed are tabled in Appendix C. Data are ranked from highest to lowest mean preference. Each mean value is the combined preferences of consumers at the three bases surveyed. This was done because (1) essentially the same menu, particularly the foil pack food components, is authorized and available to all missile base LCFs and (2) differences in levels of food preferences were not expected among bases, as demonstrated by an earlier three-base survey (Waterman, et.al., 1974)¹³ of Air Force enlisted personnel. Furthermore, whether officers' food preferences differ from enlisted consumers would be interesting methodologically, but operationally, it would be difficult to implement menu changes for only this consumer segment.

In referring to Appendix C, note that (1) numbers of respondents rating preference on the hedonic scale plus those who indicated "Never Tried" do not total the number surveyed; and (2) neither numbers nor percentages of "yes" or "no" responses to the "Food on Menu" part total the number surveyed or 100 percent. This outcome was due to respondents skipping individual foods or failure to fill in the entire food preference part of the survey.

¹³D. Waterman, H.L. Meiselman, T. Reed, L.E. Symington and L.G. Branch. Food Preferences of Air Force Enlisted Personnel. Technical Report, Food Sciences Laboratory, US Army Natick Research & Development Command, 75-51-FSL, August, 1974. AD A008 375.

In past Armed Forces surveys,^{14, 15} it has been useful to discuss preference data in terms of the 25 highest- and lowest-rated foods. Since the numbers of foods listed in the present survey was smaller than the past surveys, this represented about 35 percent of the items listed and was an arbitrary number. The high preference group (ranks 1 through 25 in Appendix) could be characterized as a short-order menu. Only five of the foods are produced as foil packs. Preference levels were distributed uniformly around "like Very Much" on the hedonic scale. Percent "never tried" responses were low for this group, and 80 percent or more of these responding said they wanted these foods on the LCF menu.

Of the 25 low-preference foods (Nonrepeated real foods ranked 120 through 146), foil pack foods appeared as frequently as in the high preference list, but consisted of meat combination, starch, vegetable, and dessert items that have historically been low-rated by military consumer populations. Notable here was the appearance of Mexican-style items proposed as additions to the foil pack line. This was evidence of selective consumer interest, since Burritos and Enchiladas were rated 6.9, a level intermediate between highest and lowest rated foods. Food preference ratings from this survey were compared with a 1977 Travis AFB survey¹⁶, and the 1973 three-base survey referenced earlier.¹⁷ Both of the earlier surveys consisted of enlisted personnel only. When the 25 high-preference foods were compared, the present ratings were consistently and substantially higher than both of the earlier surveys. With the low preference list, ratings in the present survey were generally but not always higher than the previous surveys - in the context of any of the surveys, these foods would be considered low preference. Finally, the cooked foods, which for LCF consumers are foil packs, tended to be higher than the 1977 Travis consumers. The difference was somewhat greater and more consistently higher in the present survey than in 1973 enlisted airmen survey. Few of the differences between the present and either of the previous surveys approached one category on the hedonic scale, however.

¹⁴H. L. Meiselman., W. Van Horne, B. Hasenzahl and T. Wehrly. The 1971 Fort Lewis Food Preference Survey. Technical Report, Food Sciences Laboratory US Army Natick Research & Development Command, TR-72-43-PR, January, 1972. AD 742 370.

¹⁵See Reference 13.

¹⁶K. Wyant. United States Air Force Food Habits Study: Part 1, Overview and Methodology. Technical Report in process, Food Sciences Laboratory, US Army Natick Research & Development Command, 1979.

¹⁷See Reference 13.

Although reasons for the high food ratings of LCF consumers are conjecture, such conjectures could lead to future survey research beneficial to the Missile Food Service Program. Some of them are: (1) the strong opinions regarding the importance of food expressed elsewhere in the present survey; (2) consumers used the survey as a vehicle to "vote" for the foods they wanted most, some of which appear infrequently or not at all on LCF menus; (3) LCF consumers differ from LCF garrison consumers in ways not identified by this survey; and (4) officers' ratings may have been different (perhaps higher) than enlisted personnel ratings.

Foil Pack Food Ratings (Appendix E, Table E-1)

Ratings for a food are presented only if at least ten were received. Each mean value includes all three bases, since too few returns were received to determine, by individual food, whether or not acceptance levels differed among bases. In addition, to obtain a general idea of acceptability levels over all foods, means for the five characteristics were computed, and all food ratings were crosstabulated by job to determine whether or not one group typically rated certain characteristics higher or lower than the others. These results are displayed in Appendix E, Table E-2).

With reference to Appendix E, Table E-1 data, the flavor, texture, and overall opinion ratings were no higher than "slightly good". Within each of the four food groups, no one item emerged as highly acceptable. However, of the vegetable group, corn, which was also found in the survey to be a high-preference vegetable, was highest rated. And, desserts as a group tended to be more highly rated than other food groups. Acceptability of items in the entree group was neutral or in the direction of "slightly bad" for a majority of items. Lowest ratings were observed for the starches, particularly for their texture. Actual food ratings confirmed survey findings regarding food quality (question 16), e.g., consumers' opinions that foil pack foods were generally underseasoned, underspiced, etc.

The ratings indicated that, in general, serving temperature control was adequate, although Appendix E, Table E-2 suggested that combat crew members continue to experience cool or cold food more frequently than above-ground consumers. All foods, with the exception of one starch item, were rated as underserved to some degree. This was particularly evident with certain entree items, but these ratings confirmed survey portion size question findings for foil pack foods. The factors contributing to survey opinions (see question 17 discussion) may also have been operating when the actual foods were rated. In examining all ratings, averages based upon less than about 25 responses should be considered preliminary estimates of acceptability. The numbers of ratings received seemed to reflect the frequency with which items are ordered at the LCFs, and in turn, the quantities of these items ordered from the Foil Pack Production Facility. For example, an earlier survey found fried chicken,

country style steak, roast beef, mashed potatoes, and corn as preferred foods.¹⁸ It should be noted that insufficient numbers of ratings for "slow moving" items such as tuna with noodles and the pot pies were received to present data in Appendix E, Table E-1.

The self-administered consumer feedback system was considered moderately successful. A rough estimate of percent returns can be made if one foil pack meal per day was eaten by all people at each operating LCF at the three bases. Based on these assumptions, about 15,300 Rating forms were distributed. Of these, 383 valid, i.e., properly filled in forms (2.5%) were returned. Although over 900 food ratings were received, they were dispersed, as shown in Appendix E, Table E-2, among 31 foods. In addition, over 100 forms were returned blank or incompletely filled in. The former situation indicated consumers did not take seriously the intent of being asked their opinions about foil pack foods. The latter did not occur as frequently as the former; typically, consumers failed to indicate the food name or menu number, or rated the meal, instead of the individual components. Such occurrences are usual in a self-administered system.

The alternatives to base food service office administration of a LCF consumer feedback system would be extremely costly. Response rates in a self-administered system might be improved by (1) reducing the length of the evaluation period - the greatest number of responses were received the first 10 days; (2) evaluating only selected foods, not the entire foil pack menu - consumers may tire of always receiving a form when served a foil pack food; and (3) put the cook or facility manager in charge of distribution and collection of the forms since it is not his/her work that is being assessed.

Foil Pack Breakfast Item Evaluation (Appendix E, Table E-3)

Based on average flavor, texture, and overall opinion ratings, none of the four items was acceptable to any degree. Of particular note was performance of the ham and cheese omelet which generally is a very popular cooked breakfast item. Probably three factors contributed to poor consumer reception of these items: (1) a strong preexisting negative bias toward breakfast items in foil packs as revealed by the breakfast statements in Consumer Opinion survey question 18; (2) execution of the egg-based items was considerably different than the same products cooked on a grill - ordinarily, scrambled eggs are not served with bacon bits sprinkled over, nor is the ham and cheese omelet served with a white sauce; and (3) consumer resistance to being denied the last remaining LCF meal that is "cooked from scratch" for them. Given consumer attitudes documented by the survey and their ratings for other foil pack foods, ratings for foil pack breakfast items are not likely to move in a positive direction in the foreseeable future, no matter how good these items are executed.

¹⁸See Reference 5.

CONCLUSIONS

Based upon a survey of consumer attitudes, the Minuteman Missile Site Feeding Program is providing a low level of satisfaction to missile site consumers. Foil pack foods, the mainstays of the cooked main menu items is the factor of greatest concern. Consumers, both in the survey and by means of actual food ratings indicated quality problems and limited acceptability, respectively. As a whole, consumers viewed foil pack foods as not being the best system the Air Force could offer, not as good as commercial counterparts that could be purchased at supermarkets (commissaries). On the other hand, consumers thought there was room for improvement in foil pack foods.

Consumers indicated variety and portion size were slightly less than ideal, the former possibly reflecting an invariant menu and the latter the perceived limitations of single-serve containers. Actual food ratings confirmed the latter survey finding.

Consumers considered the cook very important in the food service system, competent, and performing well under the circumstances. However, system-imposed constraints likely prevent better performance. An example was perceived inability to deliver a meal in a hurry, possibly due to long reheat times for foil pack foods. There was opposition to a self-serve system without a cook.

The breakfast meal was considered very important. Consumers were strongly for a freshly cooked breakfast and strongly opposed to breakfast items in foil packs. These attitudes appeared to be confirmed by F.E. Warren AFB consumers in their ratings for actual test breakfast items.

One indication of consumer dissatisfaction with system-provided food was the self-reported incidence of taking outside food to duty sites. This behavior was examined in five ways: (a) about 60% of all respondents reported substituting their own food for provided meals at least once per duty period but very few always did this; (b) at the same time, nearly 60 percent reported utilizing one-fourth or one-half their authorized meals, and nearly 40 percent reported higher levels of utilization; few consumers reported never eating LCF food; (c) meals consisting of foil pack foods were estimated at 1.7 per day per person but may be somewhat over-estimated; (d) the most frequently taken foods were from the beverage, snack, fresh fruit, sandwich, and main meal categories - most of these were infrequently or never available at sites; (e) finally, the strongest reason for food-taking was that foods from home taste better.

Food preference rating patterns were typical of past Air Force surveys; i.e., the same high and low preference foods emerged. As a group, however, LCF consumers indicated higher preference levels than obtained in past surveys. A possible reason was the overall importance of food measured in other survey questions. Of particular note was the top 25 ranked foods—LCF

consumer preferences for these items were substantially higher than earlier surveys.

In an effort separate from the survey, actual consumer foil pack food ratings obtained from the same three bases surveyed indicated overall marginal acceptability of foil pack foods. Limited success of the self-administered consumer feedback system was discussed, and approaches that might improve response rates were proposed.

This document reports research undertaken at the US Army Natick Research and Development Command and has been assigned No. NATICK/TR-79/035 in the series of reports approved for publication.

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Appendix A

**Food Service System Survey of
Air Force Launch Control
Facility Consumers**

Part I. Consumer Opinion Survey

Instructions: Please answer all questions by circling one number unless otherwise indicated. Your responses on this survey are confidential and will not be identified with you individually. Because your opinions are important, do not compare them with anyone else.

1:2345

ADP
Use Only

1. Where are you stationed?

1:6 _____

1. Francis E. Warren AFB
2. Grand Forks AFB
3. Minot AFB
4. Malmstrom AFB
5. Whiteman AFB
6. Davis Monthan AFB
7. Ellsworth AFB

2. What is your job at the LCF?

1:7 _____

1. Combat Crew
2. Facility Manager
3. Security Police
4. Cook
5. Missile Maintenance Crew
6. Other (write in) _____

3. How long have you been in the Air Force?

1:8 _____

1. Up to 3 years
2. 4-6 years
3. 7-12 years
4. 13-19 years
5. 20 or more years

4. Of the time you have been in the Air Force, how long have you been assigned to LCF duty? _____ Years _____ Months

1:9-12 _____

5. What is your age bracket?

1:13 _____

1. 18-25
2. 26-30
3. 31-35
4. 36-40
5. Over 40

6. Indicate where you reside.

1:14 _____

1. On-post bachelor quarters or barracks
2. On-post family quarters
3. Off-post bachelor quarters (alone)
4. Off-post quarters with other airmen or friends
5. Off-post family quarters (apartment or home)

7. The following statements refer to your dietary habits. Please indicate, by circling the appropriate number, the extent to which you agree or disagree with each.

Disagree Completely
Disagree Somewhat
Disagree Slightly
Neither Agree
Nor Disagree
Agree Slightly
Agree Somewhat
Agree Completely

ADP
Use Only

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. I eat more to gain weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I watch the amounts I eat to maintain my present weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I skip meals to lose weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I am cutting down the amount I eat to lose weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I no longer eat certain foods to maintain or lose weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I cut out between meal snacks to maintain or lose weight | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I am not at all concerned about my weight. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1:15 _____

1:16 _____

1:17 _____

1:18 _____

1:19 _____

1:20 _____

1:21 _____

8. When you are on duty, how often do you eat the breakfast meal at the LCF?

Never	Seldom	Occasionally	Frequently	Always
1	2	3	4	5

1:22 _____

9. When you are on duty, how often do you substitute the foods you bring for meals available at the LCF?

1:23 _____

1. Never
2. Seldom; only 1 meal per duty period
3. Occasionally; more than 1 meal per duty period
4. Frequently; at least 2 meals per day
5. Always; every meal, never eat LCF food

10. Listed below are various food groups. Beside each, write down specific foods you take to the LCF. Think especially of your most recent tour of duty, but be sure to mention foods that you typically take with you. If you never take food with you, go on to Question 11.

	ADP Use Only
1. Main Meal Foods (meats, casseroles, etc.) _____ _____	1:24 _____
2. Starches (potatoes, spaghetti, etc.) _____ _____	1:25 _____
3. Cooked Vegetables _____ _____	1:26 _____
4. Sandwiches _____ _____	1:27 _____
5. Snack Foods _____ _____	1:28 _____
6. Desserts _____ _____	1:29 _____
7. Fresh Fruits & Vegetables _____ _____	1:30 _____
8. Beverages _____ _____	1:31 _____
9. Breakfast Foods _____ _____	1:32 _____
10. Other Foods Not in Above Groups _____ _____	1:33 _____

11. The following are possible reasons for people bringing their own food to a LCF. Please indicate the extent to which you agree or disagree with each by circling the appropriate number.

	Disagree Completely	Disagree Somewhat	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Somewhat	Agree Completely	ADP Use Only
1. Foods brought from home are better tasting than foil pack foods.	1	2	3	4	5	6	7	1:34 _____
2. There is no food available at a LCF for between-meal snacks.	1	2	3	4	5	6	7	1:35 _____
3. Some foods on the LCF menu don't taste good.	1	2	3	4	5	6	7	1:36 _____
4. Often, food service is not available at a LCF when a person wants to eat.	1	2	3	4	5	6	7	1:37 _____
5. There is a long wait between the time a LCF meal is ordered and the time it is ready to eat.	1	2	3	4	5	6	7	1:38 _____
6. The foods people like best are not available at a LCF.	1	2	3	4	5	6	7	1:39 _____
7. The Basic Allowance for Subsistence will go farther if a person brings his own food.	1	2	3	4	5	6	7	1:40 _____
8. Menu variety is limited at LCFs.	1	2	3	4	5	6	7	1:41 _____
9. People shouldn't bring food to LCFs because it is prohibited	1	2	3	4	5	6	7	1:42 _____
10. Other (Please list) _____								1:43 _____

12. During a typical tour of duty, about what percentage of the authorized LCF provided meals do you actually eat?

0% (None)	25%	50%	75%	100% (All)
1	2	3	4	5

ADP
Use Only

1:44 _____

13. Fill in the following lines. My most recent tour of duty was for (no.) _____ hours. During that time, I ate (no.) _____ meals at the LCF consisting wholly or partly of foil pack foods.

1:45-6 _____

1:47-8 _____

14. Listed below are general areas of concern. For each, circle the number below the phrase that best describes your opinion for a typical LCF.

	Very Bad	Moderately Bad	Neither Bad Nor Good	Moderately Good	Very Good	
1. General eating environment	1	2	3	4	5	1:49 _____
2. Convenience of serving hours	1	2	3	4	5	1:50 _____
3. Degree of military atmosphere	1	2	3	4	5	1:51 _____
4. Food quality	1	2	3	4	5	1:52 _____
5. Quantity of food	1	2	3	4	5	1:53 _____
6. Service by cook	1	2	3	4	5	1:54 _____
7. Variety of regular meal items (foil packs)	1	2	3	4	5	1:55 _____
8. Variety of short order foods	1	2	3	4	5	1:56 _____
9. Variety of breakfast foods	1	2	3	4	5	1:57 _____
10. Speed of service	1	2	3	4	5	1:58 _____

15. The opposite pairs of terms below refer to aspects of the eating environment at a LCF. Circle the number below the word that best describes your feeling about each aspect.

	Extremely	Moderately	Neutral	Moderately	Extremely		ADP Use Only
1. Clean kitchen	1	2	3	4	5	Dirty kitchen	1:59 _____
2. Dirty eating utensils	1	2	3	4	5	Clean eating utensils	1:60 _____
3. Well lighted	1	2	3	4	5	Poorly lighted	1:61 _____
4. Noisy	1	2	3	4	5	Quiet	1:62 _____
5. Roomy	1	2	3	4	5	Cramped	1:63 _____
6. Few safety hazards	1	2	3	4	5	Many safety hazards	1:64 _____
7. Unattractive	1	2	3	4	5	Attractive	1:65 _____
8. Relaxed	1	2	3	4	5	Tense	1:66 _____
9. Uncomfortable temperature	1	2	3	4	5	Comfortable temperature	1:67 _____
10. Odor-free	1	2	3	4	5	Unpleasant odors	1:68 _____
11. Military atmosphere	1	2	3	4	5	Unmilitary atmosphere	1:69 _____

16. How frequently have you experienced the following situations with foil pack foods? Respond to each situation by circling the number under the appropriate word.

	Never	Seldom	Occasionally	Frequently	Always	
1. The item I want is out-of-stock	1	2	3	4	5	2:7 _____
2. Appearance is unappealing	1	2	3	4	5	2:8 _____
3. Doesn't look like the food it's supposed to be	1	2	3	4	5	2:9 _____
4. Can't identify the food by looking at it	1	2	3	4	5	2:10 _____
5. Served in the foil tray	1	2	3	4	5	2:11 _____
6. Served on plates	1	2	3	4	5	2:12 _____
7. Still frozen when served	1	2	3	4	5	2:13 _____
8. Partly raw or undercooked when served	1	2	3	4	5	2:14 _____
9. Overcooked	1	2	3	4	5	2:15 _____
10. Burned or scorched	1	2	3	4	5	2:16 _____
11. Tastes like cardboard	1	2	3	4	5	2:17 _____
12. Bland or tasteless	1	2	3	4	5	2:18 _____
13. Spoiled taste	1	2	3	4	5	2:19 _____
14. Rancid or stale taste	1	2	3	4	5	2:20 _____
15. Greasy	1	2	3	4	5	2:21 _____
16. Dry in mouth	1	2	3	4	5	2:22 _____
17. Too much salt	1	2	3	4	5	2:23 _____
18. Too little spicing	1	2	3	4	5	2:24 _____
19. Too much spicing	1	2	3	4	5	2:25 _____
20. Too much gravy or sauce	1	2	3	4	5	2:26 _____
21. Too little gravy or sauce	1	2	3	4	5	2:27 _____
22. Tough meat pieces	1	2	3	4	5	2:28 _____
23. Meat full of gristle	1	2	3	4	5	2:29 _____
24. Texture is mushy	1	2	3	4	5	2:30 _____
25. Food is cold by the time I eat it	1	2	3	4	5	2:31 _____
26. An excellent meal is served	1	2	3	4	5	2:32 _____

2
2:1

2:2-5
2:6 skip

ADP
Use Only

17. For each of the following food groups, circle the number that indicates your opinion of portion sizes as they are served in the LCF.

	Much Too Small	Somewhat Too Small	Just Right	Somewhat Too Large	Much Too Large	ADP Use Only
1. Foil Pack Meats	1	2	3	4	5	2:33_____
2. Foil Pack Meats with other ingredients (E.g., Pot Pies, Casseroles)	1	2	3	4	5	2:34_____
3. Foil Pack Starches (Potatoes, Rice, etc.)	1	2	3	4	5	2:35_____
4. Foil Pack Vegetables	1	2	3	4	5	2:36_____
5. Foil Pack Desserts	1	2	3	4	5	2:37_____
6. Short-Order Foods	1	2	3	4	5	2:38_____
7. Salads	1	2	3	4	5	2:39_____
8. Breakfast Foods	1	2	3	4	5	2:40_____

18. The following are statements that people stationed in LCFs might make. Indicate, by circling the appropriate number, the extent to which you agree or disagree with each.

	Disagree Completely	Disagree Somewhat	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Somewhat	Agree Completely	ADP Use Only
1. Generally, the meals I order at the LCF are ready when I want to eat.	1	2	3	4	5	6	7	2:41 _____
2. Food is not very important to me while I am at the LCF.	1	2	3	4	5	6	7	2:42 _____
3. Most cooks really try to do the best job they can under the circumstances.	1	2	3	4	5	6	7	2:43 _____
4. The problems with foil pack foods can be solved.	1	2	3	4	5	6	7	2:44 _____
5. Vending machines could adequately provide for all our food needs at the LCF.	1	2	3	4	5	6	7	2:45 _____
6. Many times, I feel our work is not appreciated.	1	2	3	4	5	6	7	2:46 _____
7. Present foil pack foods are as good as the top quality brand name frozen meals one can buy at the commissary.	1	2	3	4	5	6	7	2:47 _____
8. Foil pack foods are as good as the brand-name TV dinners I could buy at the commissary.	1	2	3	4	5	6	7	2:48 _____
9. I like to eat a hearty breakfast.	1	2	3	4	5	6	7	2:49 _____
10. We eat just as well as other people in the Air Force.	1	2	3	4	5	6	7	2:50 _____

	Disagree Completely	Disagree Somewhat	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Somewhat	Agree Completely	ADP Use Only
11. We frequently joke about the poor quality of foil pack foods.	1	2	3	4	5	6	7	2:51 _____
12. Breakfasts should always be freshly cooked.	1	2	3	4	5	6	7	2:52 _____
13. The cook is a very important member of the LCF team.	1	2	3	4	5	6	7	2:53 _____
14. Having a cook around the LCF makes life a lot easier for the rest of us.	1	2	3	4	5	6	7	2:54 _____
15. Cooks are rather unkempt people.	1	2	3	4	5	6	7	2:55 _____
16. Most cooks don't seem to know their jobs very well.	1	2	3	4	5	6	7	2:56 _____
17. Foil pack foods could provide the best food service in the Air Force.	1	2	3	4	5	6	7	2:57 _____
18. Time passes very slowly at a LCF.	1	2	3	4	5	6	7	2:58 _____
19. Breakfast is the one meal a person can skip without having any bad after effects.	1	2	3	4	5	6	7	2:59 _____
20. Civilian contractors could provide better food than the Air Force presently provides.	1	2	3	4	5	6	7	2:60 _____
21. If I need a meal in a hurry, the cook does everything possible to get it to me.	1	2	3	4	5	6	7	2:61 _____
22. I enjoy my work at the LCF.	1	2	3	4	5	6	7	2:62 _____

	Disagree Completely	Disagree Somewhat	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Somewhat	Agree Completely	ADP Use Only
	1	2	3	4	5	6	7	
23. The best food service system for the LCFs would be a "do it yourself" one. When I report for duty, I would be issued the foods I want to eat, store them in my own refrigerator/freezer, and reheat them in my own microwave oven.								2:63 _____
24. Generally, I like the meals they serve at the LCF.	1	2	3	4	5	6	7	2:64 _____
25. Much of the food we are served at the LCF is not worth eating.	1	2	3	4	5	6	7	2:65 _____
26. I wouldn't mind it if most of the cooked breakfast foods were reheated foil packs.	1	2	3	4	5	6	7	2:66 _____
27. People on alert in the LCFs are an elite group in the Air Force.	1	2	3	4	5	6	7	2:67 _____
28. The meals we are served at the LCF are as good as home-cooked meals.	1	2	3	4	5	6	7	2:68 _____
29. Good food can make monotonous duty more tolerable.	1	2	3	4	5	6	7	2:69 _____
30. My answers on this questionnaire are not likely to lead to better food service at the LCFs.	1	2	3	4	5	6	7	2:70 _____

19. For each of the following food groups, circle the number that indicates your opinion of the variety of menu offerings at a LCF.

Group	Far Too Little Choice	Somewhat Too Little Choice	Just The Right Number	Somewhat Too Much Choice	Far Too Much Choice	ADP Use Only
1. Foil Pack Meats	1	2	3	4	5	2:71 _____
2. Foil Pack Meats with other ingredients	1	2	3	4	5	2:72 _____
3. Foil Pack Starches (Potatoes, Rice, etc.)	1	2	3	4	5	2:73 _____
4. Foil Pack Vegetables	1	2	3	4	5	2:74 _____
5. Foil Pack Desserts	1	2	3	4	5	2:75 _____
6. Short-Order Foods	1	2	3	4	5	2:76 _____
7. Salads	1	2	3	4	5	2:77 _____
8. Breakfast Foods	1	2	3	4	5	2:78 _____

20. Do you receive a separate rations allowance (money instead of free meals)?

1. Yes

2. No

2:79 _____

21. Please make any additional comments you may have in this space.

2:80 _____

Part II. Food Preference Survey

Instructions: Your responses to this part of the survey will help Air Force menu planners put the foods you want on LCF menus. Again, because your opinions are important, do not compare your answers with anyone else.

For each food on the following pages, proceed as follows: (1) Look at the name of the food — if you have never tried it or are unfamiliar with it, "X" the number in the "Never Tried" column and go on to the next food; (2) If you are familiar with and have eaten the food, go to the column labeled "How Much You Like or Dislike This Food." Choose the words on the scale that best describe your attitude and "X" the appropriate number next to the food name; (3) Finally, to answer the question in the righthand column, "Should This Food Be on the Menu," "X" the number under "Yes" or "No."

Please note that we are interested in your general liking or disliking of the foods listed, not as they are served in the Air Force. Therefore, think of each food in a general way, rather than any particular experience you have had with it.

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food									Should This Food Be On Menu	
		1	2	3	4	5	6	7	8	9	Yes	No
030 White Bread	0	1	2	3	4	5	6	7	8	9	1	2
031 Corn & Lima Beans	0	1	2	3	4	5	6	7	8	9	1	2
032 Tomato Juice	0	1	2	3	4	5	6	7	8	9	1	2
033 Funistrada	0	1	2	3	4	5	6	7	8	9	1	2
034 Chili Con Carne	0	1	2	3	4	5	6	7	8	9	1	2
035 Bacon, Lettuce & Tomato Sandwich	0	1	2	3	4	5	6	7	8	9	1	2
036 Strawberry Shortcake	0	1	2	3	4	5	6	7	8	9	1	2
037 Chocolate Brownies	0	1	2	3	4	5	6	7	8	9	1	2
038 Chef's Salad (with Meat & Cheese)	0	1	2	3	4	5	6	7	8	9	1	2
039 Iced Tea	0	1	2	3	4	5	6	7	8	9	1	2
040 Coffeecake	0	1	2	3	4	5	6	7	8	9	1	2
041 Tea	0	1	2	3	4	5	6	7	8	9	1	2
042 Cherry Pie	0	1	2	3	4	5	6	7	8	9	1	2
043 Hashbrown Potatoes	0	1	2	3	4	5	6	7	8	9	1	2
044 Peaches (Canned)	0	1	2	3	4	5	6	7	8	9	1	2
045 Salisbury Steak with Tomato Sauce	0	1	2	3	4	5	6	7	8	9	1	2
046 Hot Tamales	0	1	2	3	4	5	6	7	8	9	1	2
047 Ravioli	0	1	2	3	4	5	6	7	8	9	1	2
048 Tomato Soup	0	1	2	3	4	5	6	7	8	9	1	2
049 Grilled Lamb Chops	0	1	2	3	4	5	6	7	8	9	1	2
050 Green Beans	0	1	2	3	4	5	6	7	8	9	1	2
051 Corned Beef	0	1	2	3	4	5	6	7	8	9	1	2
052 Ham	0	1	2	3	4	5	6	7	8	9	1	2
053 Baked Frankfurters with Sauerkraut	0	1	2	3	4	5	6	7	8	9	1	2
054 Fish Sandwich	0	1	2	3	4	5	6	7	8	9	1	2
055 Swiss Steak with Brown Gravy	0	1	2	3	4	5	6	7	8	9	1	2

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food	Should This Food Be On Menu	
			Yes	No
056 Sherbert	0	1 2 3 4 5 6 7 8 9	1	2
057 Chicken Fried Steak	0	1 2 3 4 5 6 7 8 9	1	2
058 Doughnuts	0	1 2 3 4 5 6 7 8 9	1	2
059 Pineapple Upside Down Cake	0	1 2 3 4 5 6 7 8 9	1	2
060 Grapefruit Half (Fresh)	0	1 2 3 4 5 6 7 8 9	1	2
061 Pancakes	0	1 2 3 4 5 6 7 8 9	1	2
062 Peach Pie	0	1 2 3 4 5 6 7 8 9	1	2
063 Chocolate Milk	0	1 2 3 4 5 6 7 8 9	1	2
064 Corned Beef Hash	0	1 2 3 4 5 6 7 8 9	1	2
065 Fruit Cocktail (Canned)	0	1 2 3 4 5 6 7 8 9	1	2
066 Refried Beans	0	1 2 3 4 5 6 7 8 9	1	2
067 Baked Tuna and Noodles	0	1 2 3 4 5 6 7 8 9	1	2
068 Chicken Cacciatore	0	1 2 3 4 5 6 7 8 9	1	2
069 Coffee	0	1 2 3 4 5 6 7 8 9	1	2
070 Roast Beef with Gravy	0	1 2 3 4 5 6 7 8 9	1	2
071 Plain Yogurt	0	1 2 3 4 5 6 7 8 9	1	2
072 Western Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
073 Ham Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
074 Bacon	0	1 2 3 4 5 6 7 8 9	1	2
075 Mashed Potatoes	0	1 2 3 4 5 6 7 8 9	1	2
076 Lemonade	0	1 2 3 4 5 6 7 8 9	1	2
077 Imitation Maple Syrup	0	1 2 3 4 5 6 7 8 9	1	2
078 Swedish Meatballs	0	1 2 3 4 5 6 7 8 9	1	2
079 Sausage Links	0	1 2 3 4 5 6 7 8 9	1	2
080 Cottage Cheese	0	1 2 3 4 5 6 7 8 9	1	2
081 Tea	0	1 2 3 4 5 6 7 8 9	1	2
082 Parsley Buttered Potatoes	0	1 2 3 4 5 6 7 8 9	1	2
083 Milk	0	1 2 3 4 5 6 7 8 9	1	2
084 Fruit Flavored Gelatin	0	1 2 3 4 5 6 7 8 9	1	2

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food	Should This Food Be On Menu	
			Yes	No
085 Pineapple Pie	0	1 2 3 4 5 6 7 8 9	1	2
086 Ham	0	1 2 3 4 5 6 7 8 9	1	2
087 Tossed Green Salad	0	1 2 3 4 5 6 7 8 9	1	2
088 Orange Juice	0	1 2 3 4 5 6 7 8 9	1	2
089 Instant Coffee	0	1 2 3 4 5 6 7 8 9	1	2
090 Pineapple Juice	0	1 2 3 4 5 6 7 8 9	1	2
091 Boston Baked Beans	0	1 2 3 4 5 6 7 8 9	1	2
092 Oven Fried Chicken	0	1 2 3 4 5 6 7 8 9	1	2
093 Pork Chop Suey	0	1 2 3 4 5 6 7 8 9	1	2
094 Chicken Pot Pie	0	1 2 3 4 5 6 7 8 9	1	2
095 Baked Lasagna	0	1 2 3 4 5 6 7 8 9	1	2
096 Assorted Dry Cereals	0	1 2 3 4 5 6 7 8 9	1	2
097 Lima Beans	0	1 2 3 4 5 6 7 8 9	1	2
098 Buttered Noodles	0	1 2 3 4 5 6 7 8 9	1	2
099 Peas	0	1 2 3 4 5 6 7 8 9	1	2
100 Corn	0	1 2 3 4 5 6 7 8 9	1	2
101 Barbecued Pork	0	1 2 3 4 5 6 7 8 9	1	2
102 Roast Pork with Gravy	0	1 2 3 4 5 6 7 8 9	1	2
103 Meatloaf with Brown Gravy	0	1 2 3 4 5 6 7 8 9	1	2
104 Mashed Sweet Potatoes	0	1 2 3 4 5 6 7 8 9	1	2
105 Grilled Ham with Pineapple Sauce	0	1 2 3 4 5 6 7 8 9	1	2
106 Chicken Noodle Soup	0	1 2 3 4 5 6 7 8 9	1	2
107 Mixed Vegetables	0	1 2 3 4 5 6 7 8 9	1	2
108 Barbecued Beef Patties	0	1 2 3 4 5 6 7 8 9	1	2
109 Fruit Yogurt	0	1 2 3 4 5 6 7 8 9	1	2
110 Grilled Ham & Cheese Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
111 Bananas	0	1 2 3 4 5 6 7 8 9	1	2
112 Peaches (Fresh)	0	1 2 3 4 5 6 7 8 9	1	2
113 Pizza	0	1 2 3 4 5 6 7 8 9	1	2

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food	Should This Food Be On Menu	
			Yes	No
114 Tuna Pot Pie	0	1 2 3 4 5 6 7 8 9	1	2
115 Fried Fish Portions	0	1 2 3 4 5 6 7 8 9	1	2
116 Baked Ham with Cherry Sauce	0	1 2 3 4 5 6 7 8 9	1	2
117 Burritos	0	1 2 3 4 5 6 7 8 9	1	2
118 Frijole Salad	0	1 2 3 4 5 6 7 8 9	1	2
119 Meat Loaf with Brown Gravy	0	1 2 3 4 5 6 7 8 9	1	2
120 Skimmed Milk	0	1 2 3 4 5 6 7 8 9	1	2
121 Potato Chips	0	1 2 3 4 5 6 7 8 9	1	2
122 Chili Con Carne without Beans	0	1 2 3 4 5 6 7 8 9	1	2
123 Hot Turkey Sandwich with Gravy	0	1 2 3 4 5 6 7 8 9	1	2
124 Cheeseburger	0	1 2 3 4 5 6 7 8 9	1	2
125 Grilled Steak	0	1 2 3 4 5 6 7 8 9	1	2
126 Pinto Beans	0	1 2 3 4 5 6 7 8 9	1	2
127 Blackeye Peas	0	1 2 3 4 5 6 7 8 9	1	2
128 Yellow Cake	0	1 2 3 4 5 6 7 8 9	1	2
129 Low Calorie Soda	0	1 2 3 4 5 6 7 8 9	1	2
130 Steamed Rice	0	1 2 3 4 5 6 7 8 9	1	2
131 Sliced Tomato Salad	0	1 2 3 4 5 6 7 8 9	1	2
132 Cole Slaw	0	1 2 3 4 5 6 7 8 9	1	2
133 Teriyaki Steak	0	1 2 3 4 5 6 7 8 9	1	2
134 Applesauce	0	1 2 3 4 5 6 7 8 9	1	2
135 Pork and Beans	0	1 2 3 4 5 6 7 8 9	1	2
136 Waffles	0	1 2 3 4 5 6 7 8 9	1	2
137 Submarine Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
138 Baked Fish with Cheese Sauce	0	1 2 3 4 5 6 7 8 9	1	2
139 Ice Cream	0	1 2 3 4 5 6 7 8 9	1	2

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food	Should This Food Be On Menu	
			Yes	No
140 Cranberry Sauce	0	1 2 3 4 5 6 7 8 9	1	2
141 Biscuits	0	1 2 3 4 5 6 7 8 9	1	2
142 Jellied Fruit Salad	0	1 2 3 4 5 6 7 8 9	1	2
143 Wheat Bread	0	1 2 3 4 5 6 7 8 9	1	2
144 Braised Spareribs with Sauerkraut	0	1 2 3 4 5 6 7 8 9	1	2
145 Fried Shrimp	0	1 2 3 4 5 6 7 8 9	1	2
146 Au gratin Potatoes	0	1 2 3 4 5 6 7 8 9	1	2
147 Country Style Steak	0	1 2 3 4 5 6 7 8 9	1	2
148 Oranges (Fresh)	0	1 2 3 4 5 6 7 8 9	1	2
149 Beef Stew	0	1 2 3 4 5 6 7 8 9	1	2
150 Steamed Rice	0	1 2 3 4 5 6 7 8 9	1	2
151 Barbecued Spareribs	0	1 2 3 4 5 6 7 8 9	1	2
152 Hamburger	0	1 2 3 4 5 6 7 8 9	1	2
153 Grapefruit Sections (Canned)	0	1 2 3 4 5 6 7 8 9	1	2
154 Baked Tuna & Noodles	0	1 2 3 4 5 6 7 8 9	1	2
155 Chocolate Chip Cookies	0	1 2 3 4 5 6 7 8 9	1	2
156 Country Style Chicken	0	1 2 3 4 5 6 7 8 9	1	2
157 Salmon Cakes	0	1 2 3 4 5 6 7 8 9	1	2
158 Peanut Butter & Jelly Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
159 Breaded Pork Slices	0	1 2 3 4 5 6 7 8 9	1	2
160 Enchiladas	0	1 2 3 4 5 6 7 8 9	1	2
161 Tuna Salad Sandwich	0	1 2 3 4 5 6 7 8 9	1	2
162 Barbecued Beef Cubes	0	1 2 3 4 5 6 7 8 9	1	2
163 Baked Macaroni & Cheese	0	1 2 3 4 5 6 7 8 9	1	2
164 Pineapple Pie	0	1 2 3 4 5 6 7 8 9	1	2
165 Grapefruit Juice	0	1 2 3 4 5 6 7 8 9	1	2
166 Cheddar Cheese	0	1 2 3 4 5 6 7 8 9	1	2
167 Baked Pork Slices with Gravy	0	1 2 3 4 5 6 7 8 9	1	2

FOOD LIST

Like - Dislike Scale

1	2	3	4	5	6	7	8	9
dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

Food	Never Tried	How Much You Like or Dislike This Food	Should This Food Be On Menu	
			Yes	No
168 Savory Bread Stuffing	0	1 2 3 4 5 6 7 8 9	1	2
169 O'Brien Potatoes	0	1 2 3 4 5 6 7 8 9	1	2
170 Spaghetti with Meatsauce	0	1 2 3 4 5 6 7 8 9	1	2
171 Spaghetti with Meatballs	0	1 2 3 4 5 6 7 8 9	1	2
172 Buttered Ermal	0	1 2 3 4 5 6 7 8 9	1	2
173 Celery & Carrot Sticks	0	1 2 3 4 5 6 7 8 9	1	2
174 Barbecued Chicken	0	1 2 3 4 5 6 7 8 9	1	2
175 Apple Pie	0	1 2 3 4 5 6 7 8 9	1	2
176 Write in here the names of any foods you did not see listed above that you think should be on the menu.				

APPENDIX B
TABLES, CONSUMER OPINION
SURVEY RESULTS (Part I)

TABLE B-1

DESCRIPTION OF SURVEY POPULATION, QUESTIONS 1 TO 6, 20

	Number	Percent
BASE		
Francis E. Warren	351	44
Grand Forks	241	30
Malmstrom	206	26
JOB CLASSIFICATION, ALL BASES		
Combat Crew	234	29
Facility Manager	80	10
Security Police	372	46
Cook	87	11
Other	28	4
AGE BRACKET		
18 to 25	458	57
26 to 30	165	21
31 to 35	106	13
36 to 40	57	7
Over 40	12	2
RESIDENCE		
On-Base - Bachelor	198	25
On-Base - Family	225	28
Off-Base - Bachelor	44	6
Off Base - Roommates	75	9
Off-Base - Family	257	32
LENGTH OF TIME IN AIR FORCE		
Up to 3 years	397	50
4 to 6 years	141	18
7 to 12 years	144	18
13 to 19 years	98	12
20 or more years	9	1
LENGTH OF LCF DUTY		
Less than 1 year	209	28
1 to 2 years	200	27
2 to 3 years	175	23
3 to 4 years	106	14
4 to 10 years	55	7
More than 10 years	2	-
BAS STATUS		
Receive Allowance	552	70
Have Mealcard	57 234	30

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TABLE B-2
RATIONS STATUS BY BASE AND JOB, QUESTION 20

JOB \ BAS	F. E. Warren			Malmstrom			Grand Forks		
	Total	Yes	No	Total	Yes	No	Total	Yes	No
	No.	%*	%*	No.	%*	%*	No.	%*	%*
Combat Crew	89	67	33	68	82	12	73	70	30
Facility Manager	32	100	-0-	27	96	4	19	100	-0-
Security Police	177	68	34	74	55	45	111	54	46
Cook	32	59	41	29	59	41	25	48	52

*Percent of each of the 4 job classes on each base.

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TABLE B-3 - DIETARY HABITS, QUESTION 7

STATEMENT	ALL	Base			Job Group				Ration Status	
		Warren	Melastrom	Grand Forks	Combat Crew	Facility Mgrs.	Sec. Police	Cook	BAS	Mealcard
1. Eat more to gain weight.	2.3	2.6	2.2	2.2	1.9	1.8	2.6	2.9	2.2	2.7
2. Eat to maintain weight.	4.3	4.0	4.5	4.5	4.4	4.5	4.1	4.2	4.3	4.2
3. Skip meals to lose weight.	3.5	3.2	3.6	3.8	3.5	3.4	3.4	3.8	3.5	3.3
4. Eat down to lose weight.	3.6	3.3	3.8	4.0	3.8	3.5	3.5	3.9	3.7	3.4
5. Do not eat certain foods to maintain or lose weight.	3.8	3.6	3.9	3.9	3.8	3.6	3.7	4.0	4.0	3.4
6. Eat eat snacks to maintain or lose weight.	3.8	3.5	3.9	4.3	4.0	4.1	3.6	4.2	4.0	3.6
7. Not concerned about weight.	2.9	3.2	2.8	2.7	2.9	3.1	2.8	3.0	2.9	3.0

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TABLE B-4 - FREQUENCY OF EATING BREAKFAST, QUESTION 8

Tabulated By	NEVER		SELDOM		OCCASIONALLY		FREQUENTLY		ALWAYS	
	BAS	MC	BAS	MC	BAS	MC	BAS	MC	BAS	MC
<u>Job Group</u>										
Combat Crew	15%	22%	16%	16%	17%	18%	20%	29%	33%	16%
Facility Manager	9%	-	21%	-	20%	-	20%	-	31%	-
Security Police	6%	2%	14%	8%	24%	13%	30%	28%	26%	49%
Cook	15%	11%	42%	24%	21%	14%	15%	24%	8%	27%
<u>Base</u>										
F. E. Warren	10%	6%	21%	8%	20%	17%	21%	20%	28%	49%
Malmstrom	12%	10%	13%	20%	20%	8%	18%	28%	36%	34%
Grand Forks	11%	9%	18%	12%	24%	17%	29%	34%	19%	27%

TABLE B-5
FREQUENCY OF SUBSTITUTING OWN FOOD FOR LCF MEALS, QUESTION 9

Tabulated By	NEVER		SELDOM		OCCASIONALLY		FREQUENTLY		ALWAYS	
	BAS	MC	BAS	MC	BAS	MC	BAS	MC	BAS	MC
<u>Job Group</u>										
Combat Crew	29%	20%	34%	33%	16%	22%	20%	20%	2%	1%
Facility Manager	36%	-	12%	-	32%	-	20%	-	1%	-
Security Police	34%	57%	22%	20%	26%	19%	16%	1%	2%	0%
Cook	42%	63%	27%	18%	21%	11%	6%	3%	1%	5%
<u>Base</u>										
F.E. Warren	23%	45%	24%	27%	27%	17%	23%	10%	3%	2%
Malmstrom	58%	59%	26%	15%	14%	21%	3%	5%	0%	0%
Grand Forks	30%	52%	25%	23%	25%	17%	19%	5%	2%	2%

Note:

Consult Question 9, Appendix A for number of meals associated with the 5 scale categories above.

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TABLE B-6 - FOODS TAKEN TO LCP*, QUESTION 10.

Tabulated By:	Number of Questionnaires	FOOD GROUPS							Breakfast Foods
		Main Meal	Starches	Cooked Vegetables	Sandwiches	Snack Foods	Desserts	Fresh Fruits & Vegetables	Beverages
<u>All</u>	801	30/1.9	13/1.4	8/1.6	30/1.6	44/1.8	47/1.6	43/2.3	27/1.5
<u>Job Group</u>									
Combat Crew	234	29/2.0	12/1.6	6/1.6	48/1.7	59/2.0	25/1.6	48/2.4	69/1.6
Facility Manager	80	41/2.0	18/1.3	6/1.8	29/1.4	46/1.9	14/1.3	32/2.7	44/1.4
Security Police	372	32/1.8	14/1.4	9/1.5	26/1.6	40/1.6	14/1.7	27/2.0	41/1.4
Cook	87	22/2.1	11/1.5	7/1.7	17/1.3	29/1.4	20/1.9	18/1.8	30/1.3
<u>Base</u>									
F. E. Warren	351	40/1.8	16/1.5	10/1.6	35/1.6	57/1.7	21/1.5	42/2.1	63/1.4
Malstrom	206	8/1.6	3/1.3	2/1.2	14/1.6	23/1.9	9/1.6	16/2.4	27/1.6
Grand Forks	241	34/2.4	18/1.4	9/1.7	35/1.6	44/1.8	17/1.8	32/2.5	42/1.7
<u>Rations Status</u>									
BAS	552	34/1.9	14/1.5	8/1.6	38/1.6	48/1.8	18/1.6	36/2.3	51/1.5
Mealcard	234	22/1.9	10/1.3	6/1.5	41/1.4	35/1.7	13/1.8	23/2.1	16/1.5

*The first statistic in each column is the percent of respondents who wrote in names of foods taken. The second statistic is the average number of items mentioned. The food group labeled "other" is excluded due to low percent response.

Appendix B

TABLE B-7. REASONS FOR BRINGING OWN FOOD TO LCF, QUESTION 11.

Statement *	BASE		JOB				RATIONS STATUS			All Respondents N=801
	P. E. Warren N=351	Malastrom N=206	Grand Forks N=211	Combat Crew N=234	Facility Manager N=80	Security Police N=372	Cook N=87	BAS N=552	Mealcard N=234	
1. Foods from home better tasting.	5.7	5.7	5.8	5.7	5.6	6.0	5.1	5.7	5.7	5.7
2. No food for snacks.	5.0	4.3	6.0	5.4	5.5	5.1	4.3	5.2	4.9	5.1
3. LCF foods don't taste good.	5.9	5.9	5.9	5.8	6.1	6.1	5.3	5.8	5.9	5.9
4. Food service often not available when wanted.	4.1	3.7	4.1	4.7	2.7	4.3	1.9	4.1	3.6	4.0
5. Long wait before food is ready.	3.9	3.1	4.2	4.1	2.9	4.0	2.7	3.8	3.7	3.8
6. Best liked foods are unavailable.	4.5	4.5	4.7	4.6	4.1	4.9	3.8	4.5	4.6	4.6
7. BAS goes farther with own food.	4.0	4.2	3.7	3.7	3.6	4.3	3.6	3.9	4.1	4.0
8. Menu variety is limited.	4.8	5.0	4.9	4.8	4.9	5.1	4.2	4.9	4.9	4.9
9. Bringing own food is prohibited.	1.7	3.0	2.1	1.5	2.7	2.1	3.5	2.1	2.1	2.1

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TABLE B-8. General Areas of Concern, Question 14.

Tabulated by: Scale (1)	F. E. Warren	BASE		Grand Forks	Combat Crew	JOB		RATIONS STATUS		
		Malmstrom				Facility Manager	Security Police	Bas	Mealcard	All Respondents
Rating Environment	3.3	3.4	3.2	2.5	3.8	3.5	3.9	3.3	3.4	3.3
Convenience of Serving Hours	3.4	3.8	3.5	3.4	4.1	3.4	4.0	3.6	3.6	3.5
Military Atmosphere	3.0	3.2	3.1	2.9	3.4	3.1	3.5	3.1	3.1	3.1
Food Quality	2.9	3.1	3.0	3.0	3.2	2.8	3.6	3.0	3.0	3.0
Food Quantity	3.0	3.2	3.1	3.3	3.2	2.9	3.7	3.1	3.1	3.1
Service by Cook	3.7	3.9	3.9	3.6	4.0	3.7	4.5	3.8	3.8	3.8
Foil Pack Variety	3.2	3.0	3.1	3.1	3.3	2.9	2.9	3.1	3.0	3.1
Short-order Variety	2.1	2.5	2.1	2.1	2.1	2.1	3.1	2.2	2.3	2.2
Breakfast Item Variety	3.6	3.6	3.4	3.5	3.8	3.4	4.1	3.5	3.5	3.5
Speed of Service	3.4	3.8	3.4	3.3	3.9	3.5	4.2	3.5	3.6	3.5

Consult Question 14, Appendix A for scale categories and scoring.

TABLE B-9. Reactions to Eating Environment, Question 15.

Tabulated by: Scale ⁽¹⁾	BASE		JOB		RATIONS STATUS			
	F.E. Warren N=351	Malmstrom N=206	Grand Forks N=241	Combat Crew N=234	Facility Manager N=80	Security Police N=372	Cook N=87	All Respondents N=801
1. Clean vs. Dirty Kitchen	1.9	1.7	1.8	1.8	1.6	2.0	1.8	1.9
2. Clean vs. Dirty Eating Utensils	2.3	2.2	2.4	2.3	2.1	2.4	2.1	2.3
3. Well vs. Poorly Lighted	2.1	2.1	2.1	2.3	1.8	2.0	2.2	2.1
4. Quiet vs. Noisy	3.2	3.3	3.1	3.7	3.2	3.0	2.9	3.2
5. Roomy vs. Cramped	2.9	2.8	2.7	3.3	2.4	2.7	2.4	2.8
6. Few vs. Many Safety Hazards	1.3	1.2	1.4	1.9	0.6	1.2	1.1	1.3
7. Attractive vs. Unattractive	3.3	2.9	3.3	3.5	3.0	3.2	2.7	3.2
8. Relaxed vs. Tense	2.7	2.7	2.9	3.2	2.4	2.5	2.7	2.8
9. Comfortable vs. Uncom- fortable Temperature	2.7	2.6	2.8	3.0	2.5	2.6	2.7	2.7
10. Odor-free vs. Unpleasant Odors	2.5	2.3	2.6	2.6	2.0	2.5	2.4	2.5
11. Military vs. Unmilitary Atmosphere	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7

⁽¹⁾For east of interpretation, the positively-associated descriptor is on the left and the negatively-associated on the right. Consult Appendix A for the way Question 15 was presented to respondents.

TABLE B-10. PERCEPTIONS OF FOIL PACK FOOD QUALITY, QUESTION 16.

Tabulated by: Scale *	F. E. Warren N=351	BASE Malstrom N=206	Grand Forks N=211	Combat Grew N=234	JOB		BAS N=552	Mealcard N=234	All Respondents N=801
					Facility Manager N=80	Security Police N=372			
1. Item wanted is out-of-stock.	3.1	3.1	3.1	3.2	2.9	3.2	3.1	3.1	3.1
2. Unappealing appearance.	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.0
3. Uncharacteristic appearance.	2.7	2.7	2.7	2.6	2.5	2.9	2.7	2.7	2.7
4. Can't identify by appearance.	2.1	2.2	2.1	2.1	1.8	2.3	2.1	2.2	2.1
5. Served in foil tray.	2.8	1.8	3.9	2.9	2.6	3.1	2.9	2.8	2.8
6. Served on plates.	3.6	4.5	2.6	3.7	3.7	3.3	3.5	3.6	3.5
7. Still frozen when served.	1.8	1.5	1.8	1.6	1.6	1.9	1.7	1.7	1.7
8. Raw or uncooked as served.	2.1	1.9	2.1	2.2	1.9	2.2	2.1	2.0	2.0
9. Overcooked.	2.7	2.3	2.4	2.5	2.3	2.7	2.5	2.5	2.5
10. Burned or scorched.	2.4	2.0	2.2	2.1	2.2	2.5	2.2	2.2	2.2
11. Tastes like cardboard.	2.5	2.5	2.4	2.5	2.3	2.6	2.4	2.5	2.5
12. Bland or tasteless.	3.1	3.1	2.9	3.1	3.1	3.1	3.0	3.0	3.0
13. Spoiled taste.	1.9	1.8	1.9	1.7	1.5	2.1	1.8	1.9	1.9
14. Rancid or stale taste.	1.9	1.8	1.9	1.6	1.7	2.2	1.9	2.0	1.9
15. Greasy.	3.0	2.7	3.0	2.9	2.7	3.1	2.9	3.0	2.9

* For scale categories and scoring, consult Question 16, Appendix A.

TABLE B-10. PERCEPTIONS OF FOIL PACK FOOD QUALITY, QUESTION 16 (continued).

Scale #	Tabulated by:	BASE		JOB		RATIONS STATUS		
		F.E. Warren N=351	Malarkton N=206	Grand Forks N=241	Combat Crew N=234	Facility Manager N=80	Security Police N=372	Cook N=87
						BAS N=552	Mealcard N=234	All Respondents N=801
16. Dry in mouth.		2.6	2.5	2.4	2.5	2.4	2.7	2.1
17. Too much salt.		1.7	1.8	1.7	1.7	1.7	1.8	1.6
18. Too little spicing.		2.9	2.9	2.8	3.0	3.0	2.9	2.4
19. Too much spicing.		1.7	1.8	1.8	1.8	1.7	1.8	1.8
20. Too much gravy or sauce.		2.4	2.2	2.4	2.3	2.4	2.4	2.2
21. Too little gravy or sauce.		2.5	2.6	2.3	2.6	2.3	2.5	2.1
22. Tough meat pieces.		3.2	3.3	3.2	3.2	3.4	3.3	2.9
23. Meat full of gristle.		3.1	3.0	3.1	3.1	3.1	3.1	2.6
24. Texture is mushy.		2.8	2.8	2.7	2.7	2.9	2.9	2.4
25. Food cold when eaten.		2.5	2.5	2.7	3.2	2.0	2.6	1.7
26. An excellent meal is served.		2.8	3.0	2.8	2.7	3.1	2.6	3.7

* For scale categories and scoring, consult Question 16, Appendix A.

TABLE B-11. Perceived Portion Sizes, LCF Food, Question 17.

Food Groups*	F. E. Warren	BASE		JOB			RATIONS STATUS			All Respondents
		Malmstrom	Grand Forks	Combat Crew	Facility Manager	Security Police	Cook	BAS	Mealcard	
Foil Pack Items	N=351	N=206	N=241	N=234	N=80	N=372	N=87	N=552	N=234	N=801
Meats	1.9	2.0	2.2	2.1	2.0	1.8	2.4	2.0	2.0	2.0
Meats with Other Ingredients	2.1	2.2	2.2	2.2	2.2	2.0	2.6	2.2	2.2	2.2
Starches	2.4	2.5	2.5	2.7	2.4	2.3	2.6	2.5	2.4	2.5
Vegetables	2.5	2.6	2.5	2.6	2.6	2.4	2.8	2.6	2.5	2.5
Desserts	2.2	2.4	2.4	2.4	2.4	2.2	2.6	2.3	2.3	2.3
Short-Order Items	2.1	2.3	2.0	2.2	2.2	2.0	2.8	2.2	2.2	2.2
Salads	2.7	2.8	2.2	2.5	2.7	2.6	2.9	2.6	2.6	2.6
Breakfast Foods	2.6	2.7	2.4	2.6	2.7	2.4	2.9	2.6	2.5	2.5

* Scale: 1=Much Too Small; 2=Somewhat Too Small; 3=Just Right; 4=Somewhat Too Large; 5=Much Too Large

Appendix B

TABLE B-12. Statements About LCF Duty, LCF Food, Question 18. (1)

Item #	Tabulated By: Statement LCF Duty:	F. E. Warren N=351	BASE		Grand Forks N=241	Combat Crew N=234	JOB		RATIONS STATUS			All Respondents N=801
			Malmstrom N=206	Facility Manager N=80			Police N=372	Cook N=87	BAS N=552	Mealcard N=234		
27.	Alert People are an elite group in the Air Force.	4.4	4.8	4.3	4.0	4.4	4.8	4.7	4.4	4.7	4.5	
6.	Work is not appreciated.	5.3	5.0	5.6	5.3	5.0	5.4	5.7	5.3	5.3	5.3	
18.	Time passes slowly.	5.7	5.0	5.7	5.5	5.0	5.7	5.2	5.5	5.5	5.5	
22.	Enjoy LCF Work.	3.8	4.5	3.8	3.9	5.5	3.8	3.9	4.1	3.8	4.0	
<u>Importance of Food:</u>												
2.	Not too important at LCF.	2.2	2.3	2.7	2.2	2.4	2.3	3.1	2.4	2.1	2.4	
29.	Can make monotonous duty more tolerable.	6.3	6.4	6.0	6.4	6.4	6.2	6.0	6.3	6.2	6.2	
<u>LCF Food in General:</u>												
10.	Eat as well as other Air Force people.	3.1	3.2	2.4	2.8	2.7	2.8	3.9	2.9	2.9	2.9	
24.	Like LCF meals.	3.9	4.3	4.1	4.2	4.4	3.9	4.6	4.1	4.0	4.1	
28.	Good as home-cooked.	1.8	2.0	1.7	1.7	1.8	1.7	2.8	1.8	1.8	1.8	
25.	Not worth eating.	3.7	3.5	3.6	3.3	3.0	4.1	3.2	3.5	3.8	3.6	
30.	Questionnaire answers not likely to lead to better LCF food service.	4.8	4.8	5.0	5.1	4.8	4.8	4.4	4.8	4.8	4.8	

TABLE B-12. Statements About LCF Duty, LCF Food, Question 18 (continued), Page 2.

Item #	Statement	F. E. Warren N=351	BASE Malmstrom N=206	Grand Forks N=241	JOB			RATIONS STATUS			All Respondents N=801
					Combat Crew N=234	Facility Manager N=80	Security Police N=372	Cook N=87	BAS Mealcard N=552	Mealcard N=234	
11.	Joke about poor quality.	5.7	5.8	5.9	5.9	5.6	5.8	5.5	5.8	5.7	5.8
17.	Could provide best food service in Air Force.	2.9	2.4	2.4	2.6	2.6	2.4	3.0	2.7	2.3	2.6
4.	Problems can be solved.	5.4	5.2	5.3	5.1	5.3	5.5	5.3	5.3	5.3	5.3
7.	Good as top quality brand name frozen meals.	2.9	2.5	2.7	2.7	2.6	2.5	3.8	2.8	2.7	2.8
8.	Good as brand name TV dinners.	3.1	2.9	2.8	3.1	2.9	2.7	3.9	3.0	2.9	3.0
<u>The LCF Cooks:</u>											
13.	Very important team member	6.4	6.6	6.4	6.7	6.8	6.3	6.0	6.5	6.2	6.4
14.	Makes LCF life easier.	6.2	6.4	5.9	6.4	6.6	6.0	5.6	6.2	5.9	6.2
15.	Cooks are rather unkempt.	3.2	2.7	3.0	2.6	2.7	3.4	2.7	3.0	3.0	3.0
16.	Cooks don't know job.	3.4	3.0	3.0	3.2	3.2	3.3	2.7	3.2	3.2	3.2
1.	Meals ready when I want to eat.	4.4	5.2	4.2	4.5	5.4	4.1	5.9	4.6	4.6	4.6
21.	Need meal in hurry, cook does everything possible to deliver.	3.9	4.8	4.0	3.9	4.9	3.8	6.0	4.2	4.3	4.2
3.	Most cooks do best they can under circumstances.	4.7	5.3	5.3	4.7	5.4	5.0	6.1	5.0	5.2	5.0

Appendix B

TABLE B-12. Statements About LCF Duty, LCF Food, Question 18 (continued), Page 3.

Tabulated By:		F. E.		BASE		Grand		JOB		RATIONS STATUS				All	
Item #	Statement	Warren N=351	Malmstrom N=206	Malins N=241	Combat Crew N=234	Facility Manager N=80	Security Police N=372	Cook N=87	BAS N=552	Mealcard N=234				Respondents N=801	
19.	Can skip without bad effects.	2.7	2.9	2.9	2.6	2.6	2.8	3.3	2.8	2.8	2.8	2.8	2.8	2.8	
9.	Like to eat hearty breakfast.	5.5	5.1	5.2	5.1	5.0	5.7	5.0	5.3	5.4	5.4	5.4	5.4	5.3	
12.	Should always be freshly cooked.	6.7	6.7	6.6	6.7	6.9	6.8	6.3	6.7	6.6	6.6	6.6	6.6	6.7	
26.	Wouldn't mind it if most cooked breakfast foods were reheated foil packs.	1.5	1.5	1.6	1.5	1.1	1.4	2.6	1.5	1.5	1.5	1.5	1.5	1.5	
<u>Food Service Concepts</u>															
5.	Vending Machines.	2.3	1.9	2.5	1.6	1.8	2.4	3.9	2.1	2.5	2.5	2.5	2.5	2.2	
20.	Civilian contractors.	4.4	4.3	4.5	4.1	4.1	4.8	3.9	4.3	4.5	4.5	4.5	4.5	4.4	
23.	Do it yourself.	3.4	2.7	3.8	3.3	2.5	3.3	4.6	3.2	3.5	3.5	3.5	3.5	3.4	

¹For exact statement, scales, and scoring, consult Question 18, Appendix A.

Appendix B

TABLE B-13. Menu Variety at LCF's, Question 19.

Tabulated By:		BASE		JOB			RATIONS STATUS			All
Food Group ¹	F. E.	Malnstrom	Grand	Combat	Facility	Security	Cook	BAS	Mealcard	Respondents
	Warren	N=206	Forks	Crew	Manager	Police	N=87	N=552	N=234	N=801
Foil Pack Foods	N=351		N=241	N=234	N=80	N=372				
Meats	2.3	2.1	2.4	2.4	2.5	2.1	2.7	2.3	2.2	2.3
Meats w/Other Ingredients	2.2	2.1	2.2	2.3	2.3	2.0	2.5	2.2	2.1	2.2
Starches	2.6	2.5	2.6	2.7	2.7	2.4	2.8	2.6	2.5	2.6
Vegetables	2.6	2.6	2.5	2.6	2.6	2.5	2.9	2.6	2.5	2.6
Desserts	2.2	2.3	2.4	2.2	2.3	2.2	2.7	2.3	2.3	2.3
Short-Order	1.7	1.9	1.7	1.7	1.7	1.7	2.4	1.7	1.8	1.8
Salads	2.5	2.5	2.1	2.3	2.4	2.4	2.7	2.4	2.4	2.4
Breakfast Foods	2.6	2.6	2.3	2.5	2.7	2.3	2.9	2.5	2.4	2.5

¹For scale and scoring, consult Question 19, Appendix A.

APPENDIX C

Food Preference Data
(Part II)
All LCF Consumers at Three
Strategic Air Command Bases.

Table C-1. FOOD PREFERENCE DATA

RANK	FOOD #	F O O D N A M E	MEAN	ST DEV	N TRIED	N NEVER TRIED	X NEVER TRIED	N YES	X YES	N NO	% NO
1	125	GRILLED STEAK	8.37	1.19	686	33	4.59	653	90.82	8	1.11
2	139	ICE CREAM	8.14	1.22	696	9	1.28	647	91.77	9	1.28
3	83	MILK	8.12	1.56	725	7	.96	674	92.08	6	.82
4	148	ORANGES (FRESH)	8.08	1.37	675	43	5.99	636	88.58	20	2.78
5	86	ORANGE JUICE	8.05	1.29	714	9	1.24	663	91.70	6	.83
6	74	BACON	7.94	1.41	723	14	1.90	674	91.45	9	1.22
7	36	STRAWBERRY SHORTCAKE	7.94	1.55	653	80	10.91	616	84.04	35	4.77
8	152	HAMBURGER	7.93	1.42	698	18	2.51	644	89.94	16	2.23
9	124	CHEESEBURGER	7.92	1.50	700	21	2.91	648	89.88	22	3.05
10	35	BACON LETTUCE & TOMATO SAND	7.92	1.58	661	70	9.58	612	83.72	35	4.79
11	112	PEACHES (FRESH)	7.91	1.56	652	73	10.07	607	83.72	41	5.66
12	100	CORN	7.91	1.37	714	13	1.79	655	90.10	16	2.20
13	38	CHEF'S SALAD	7.90	1.61	628	102	13.97	611	83.70	38	5.21
14	87	TOSSED GREEN SALAD	7.90	1.45	707	13	1.81	658	91.39	12	1.67
15	175	APPLE PIE	7.85	1.45	692	24	3.35	638	89.11	22	3.07
16	110	GRILLED HAM & CHEESE SAND	7.81	1.60	652	71	9.82	618	85.48	29	4.01
17	113	PIZZA	7.81	1.64	667	59	8.13	593	81.68	57	7.85
18	145	FRIED SHRIMP	7.79	1.93	626	94	13.06	567	78.75	62	8.61
19	70	ROAST BEEF WITH GRAVY	7.79	1.45	711	21	2.87	651	88.93	20	2.73
20	151	BARBECUED SPARERIBS	7.78	1.65	630	65	11.89	580	81.12	52	7.27
21	123	HOT TURKEY SANDWICH WITH GRAVY	7.77	1.46	638	81	11.27	608	84.56	37	5.15
22	141	DISCUITS	7.76	1.42	663	57	7.92	609	84.58	36	5.00
23	86	HAM	7.75	1.53	690	34	4.70	641	88.54	20	2.76
24	137	SUBMARINE SANDWICH	7.74	1.58	618	96	13.45	575	80.53	56	7.84
25	73	HAM SANDWICH	7.73	1.36	637	98	13.33	608	82.72	38	5.17

TABLE C-1. FOOD PREFERENCE DATA (continued)

RANK	FOOD #	FOOD NAME	MEAN	ST DEV	N TRIED	N NEVER TRIED	% NEVER TRIED	N YES	% YES	N NO	% NO
26	76	LEMONADE	7.70	1.55	662	72	9.81	615	83.79	36	4.90
27	111	BANANAS	7.70	1.67	651	75	10.33	606	83.47	44	6.06
28	43	HASHBROWN POTATOES	7.68	1.65	724	10	1.36	657	89.51	20	2.72
29	155	CHOCOLATE CHIP COOKIES	7.66	1.58	657	60	8.37	595	82.98	52	7.25
30	52	HAM	7.56	1.66	689	39	5.36	623	85.58	31	4.26
31	58	DOUGHNUTS	7.55	1.53	676	59	8.03	613	83.40	53	7.21
32	37	CHOCOLATE BROWNIES	7.55	1.76	606	122	16.76	584	77.47	70	9.62
33	39	ICED TEA	7.52	2.05	644	82	11.29	593	81.68	42	5.79
34	171	SPAGHETTI WITH MEATBALLS	7.50	1.74	645	69	9.66	584	81.79	50	7.00
35	174	BARBECUED CHICKEN	7.49	1.71	681	36	5.02	623	86.89	32	4.46
36	149	BEEF STEW	7.49	1.65	639	82	11.37	589	81.69	52	7.21
37	133	TERIYAKI STEAK	7.49	1.93	509	209	29.11	472	65.74	75	10.45
38	156	COUNTRY STYLE CHICKEN	7.48	1.74	659	59	6.22	583	81.20	55	7.66
39	147	COUNTRY STYLE STEAK	7.48	1.71	691	31	4.29	621	86.01	41	5.68
40	79	SAUSAGE LINKS	7.45	1.78	695	38	5.18	633	86.36	29	3.96
41	143	WHEAT BREAD	7.44	1.88	653	63	8.80	590	82.40	43	6.01
42	44	PEACHES (CANNED)	7.44	1.67	668	58	7.99	604	83.20	47	6.47
43	96	BAKED LASAGNA	7.43	1.91	599	127	17.49	543	74.79	75	10.33
44	134	APPLESAUCE	7.42	1.67	646	73	10.15	593	82.48	44	6.12
45	92	OVEN FRIED CHICKEN	7.35	1.86	690	34	4.70	620	85.64	36	4.97
46	102	ROAST PORK WITH GRAVY	7.34	1.76	664	57	7.91	595	82.52	49	6.80
47	170	SPAGHETTI WITH MEATSAUCE	7.31	1.85	661	57	7.94	581	80.92	60	8.36
48	121	POTATO CHIPS	7.30	1.68	650	69	9.60	563	78.30	78	10.85
49	101	BARBECUED PORK	7.30	1.85	670	54	7.46	589	81.35	54	7.46
50	63	CHOCOLATE MILK	7.30	1.83	708	27	3.67	638	86.80	31	4.22

TABLE C-1. FOOD PREFERENCE DATA (continued)

RANK	FOOD #	FOOD NAME	MEAN	ST DEV	N TRIED	N NEVER TRIED	% NEVER TRIED	N YES	% YES	N NO	% NO
51	57	CHICKEN FRIED STEAK	7.21	1.85	661	77	10.43	596	80.76	57	7.72
52	55	SWISS STEAK WITH BROWN GRAVY	7.21	1.83	692	40	5.46	614	83.88	41	5.60
53	75	MASHED POTATOES	7.19	1.90	723	12	1.63	648	88.16	27	3.67
54	61	PANCAKES	7.18	1.81	675	62	8.41	617	83.72	44	5.97
55	42	CHERRY PIE	7.18	1.94	699	30	4.12	611	83.81	50	6.86
56	96	ASSORTED DRY CEREALS	7.17	1.82	698	23	3.19	629	87.24	31	4.30
57	56	SHERBERT	7.17	1.95	659	77	10.46	577	78.40	76	10.33
58	65	FRUIT COCKTAIL (CANNED)	7.16	1.89	662	70	9.56	598	81.69	55	7.51
59	72	WESTERN SANDWICH	7.15	1.79	453	281	38.28	456	62.13	65	8.86
60	105	GRILLED HAM WITH PINEAPPLE SAUCE	7.14	2.10	643	76	10.57	553	76.91	73	10.15
61	135	PORK AND BEANS	7.12	1.88	654	64	8.91	584	81.34	56	7.80
62	106	CHICKEN NOODLE SOUP	7.12	1.74	672	53	7.31	604	83.31	50	6.90
63	59	PINEAPPLE UPSIDE DOWN CAKE	7.10	2.04	610	124	16.89	534	72.75	95	12.94
64	136	WAFFLES	7.09	1.90	675	44	6.12	594	82.61	53	7.37
66	161	TUNA SALAD SANDWICH	7.07	2.11	619	99	13.79	542	75.49	83	11.56
66	162	BARBECUED BEEF CUBES	7.05	1.92	583	133	18.58	513	71.65	80	11.17
67	103	MEATLOAF WITH BROWN GRAVY	7.04	1.96	680	40	5.56	595	82.64	58	8.06
68	81	TEA	7.03	2.19	657	68	9.38	589	81.24	50	6.90
69	84	FRUIT FLAVORED GELATIN	7.03	2.05	636	96	13.11	554	75.68	78	10.66
70	173	CELERY & CARROT STICKS	7.02	2.00	628	88	12.29	546	76.26	76	10.61
71	30	WHITE BREAD	7.01	1.74	724	7	.96	661	90.42	21	2.87
72	167	BAKED PORK SLICES WITH GRAVY	6.98	1.97	634	82	11.45	544	75.98	79	11.03
73	146	AUGRATIN POTATOES	6.96	2.07	636	83	11.54	549	76.36	70	9.74
74	128	YELLOW CAKE	6.94	1.88	661	26	5.02	583	81.31	58	8.09
75	41	TEA	6.94	2.14	648	81	11.11	579	79.42	54	7.41

TABLE C-1. FOOD PREFERENCE DATA (continued)

RANK	FOOD #	FOOD NAME	MEAN	ST DEV	N TRIED	N NEVER TRIED	% NEVER TRIED	N YES	% YES	N NO	% NO
76	119	MEAT LOAF WITH BROWN GRAVY	6.93	1.99	678	36	5.04	583	81.65	65	9.10
77	150	STEAMED RICE	6.92	2.11	655	60	8.39	572	80.00	63	8.81
78	62	PEACH PIE	6.91	1.88	676	58	7.90	577	78.61	73	9.95
79	117	BURRITOS	6.91	2.25	573	147	20.42	484	87.22	118	16.39
80	142	JELLIED FRUIT SALAD	6.91	1.98	606	113	15.72	497	69.12	110	15.30
81	91	BOSTON BAKED BEANS	6.91	2.05	656	66	9.14	562	77.84	71	9.83
82	40	COFFEECAKE	6.91	2.08	601	130	17.78	512	70.04	102	13.95
83	160	ENCHILADAS	6.90	2.37	559	157	21.93	460	64.25	127	17.74
84	159	BREADED PORK SLICES	6.90	2.01	610	106	14.80	527	73.60	75	10.47
85	132	COLE SLAW	6.89	2.27	624	94	13.09	537	74.79	82	11.42
86	166	CHEDDAR CHEESE	6.88	2.29	642	74	10.34	536	74.86	91	12.71
87	78	SWEDISH MEATBALLS	6.87	1.99	569	165	22.48	506	68.94	80	10.90
88	50	GREEN BEANS	6.85	1.94	706	26	3.55	634	86.81	35	4.78
89	99	PEAS	6.84	2.04	686	34	4.72	608	84.44	46	6.39
90	54	FISH SANDWICH	6.82	2.09	637	96	13.10	542	73.94	83	11.32
91	163	BAKED MACARONI & CHEESE	6.81	2.24	665	52	7.25	551	76.85	88	12.27
92	130	STEAMED RICE	6.80	2.11	660	59	8.21	569	79.14	60	8.34
93	168	SAVORY BREAD STUFFING	6.78	2.17	507	210	29.29	430	59.97	114	15.90
94	108	BARBECUED BEEF PATTIES	6.76	2.08	655	67	9.28	538	74.52	90	12.47
95	82	PARSLEY BUTTERED POTATOES	6.76	2.09	585	144	19.75	511	70.10	81	11.11
96	60	GRAPEFRUIT HALF (FRESH)	6.73	2.42	613	116	15.91	526	72.15	103	14.13
97	122	CHILI CON CARNE WITHOUT BEANS	6.72	2.26	546	167	23.42	442	61.99	131	18.37
98	115	FRIED FISH PORTIONS	6.72	2.15	664	59	8.16	552	76.35	89	12.31
99	131	SLICED TOMATO SALAD	6.71	2.28	604	112	15.84	506	70.67	94	13.13
100	107	MIXED VEGETABLES	6.69	2.11	686	37	5.12	580	80.22	71	9.82

TABLE C-1. FOOD PREFERENCE DATA (continued)

RANK	FOOD #	F O O D N A M E	MEAN	ST DEV	N TRIED	N NEVER TRIED	% NEVER TRIED	N YES	% YES	N NO	% NO
101	34	CHILI CON CARNE	6.64	2.10	561	165	22.73	494	68.04	95	13.09
102	69	COFFEE	6.56	2.80	682	48	6.58	597	81.78	53	7.26
103	158	PEANUT BUTTER & JELLY SANDWICH	6.55	2.23	671	50	6.93	519	71.98	119	16.50
104	138	BAKED FISH WITH CHEESE SAUCE	6.55	2.49	520	199	27.68	426	59.25	129	17.94
105	116	BAKED HAM WITH CHERRY SAUCE	6.53	2.40	558	164	22.71	467	64.68	114	15.79
106	98	BUTTERED NOODLES	6.52	2.04	612	111	15.35	484	66.94	124	17.15
107	144	BRAISED SPARERIBS W/ SAUERKRAUT	6.51	2.55	516	202	28.13	398	55.43	163	22.70
108	90	PINEAPPLE JUICE	6.50	2.28	638	83	11.51	514	71.29	114	15.81
109	45	SALISBURY STEAK WITH TOM SAUCE	6.49	2.09	638	83	11.51	529	73.37	90	12.48
110	49	GRILLED LAMB CHOPS	6.48	2.38	521	202	27.94	434	60.03	123	17.01
111	169	O'BRIEN POTATOES	6.41	2.14	572	146	20.33	469	65.32	103	14.35
112	68	CHICKEN CACCIATORE	6.40	2.24	474	253	24.80	378	51.99	149	20.50
113	93	PORK CHOP SUEY	6.36	2.36	537	182	25.31	418	58.14	156	21.70
114	77	IMITATION MAPLE SYRUP	6.35	2.15	658	72	9.86	555	76.03	85	11.64
115	47	RAVIOLI	6.34	2.21	620	111	15.53	491	66.89	132	17.98
116	140	CRANBERRY SAUCE	6.34	2.40	632	89	12.34	461	63.94	162	22.47
117	126	PINTO BEANS	6.33	2.44	580	137	19.11	432	60.25	163	22.73
118	94	CHICKEN POT PIE	6.32	2.21	624	96	13.33	493	68.47	124	17.22
119	187	SALMON CAKES	6.32	2.49	553	164	22.87	435	60.67	140	19.53
120	152	GRAPEFRUIT SECTIONS (CANNED)	6.27	2.48	604	109	15.29	471	66.06	144	20.20
121	165	GRAPEFRUIT JUICE	6.24	2.59	671	48	6.68	533	74.13	104	14.46
122	48	TOMATO SOUP	6.24	2.29	611	120	16.42	497	67.99	122	16.69
123	104	MASHED SWEET POTATOES	6.20	2.60	631	93	12.85	466	64.36	155	21.41
124	46	HOT TOMATOES	6.19	2.45	530	201	27.50	413	56.50	171	23.39
125	85	PINEAPPLE PIE	6.11	2.36	590	135	18.62	439	60.55	152	20.97

TABLE C-1. FOOD PREFERENCE DATA (continued)

DAWK FOOD #	F O O D N A M E	MEAN	ST DEV	N TRIED	N NEVER TRIED	% NEVER TRIED	N YES	% YES	N NO	% NO
126 31	CORN & LIMA BEANS	6.09	2.27	665	86	9.03	553	75.65	98	13.41
127 154	BAKED TUNA & NOODLES	6.09	2.47	599	118	16.69	438	61.95	156	22.07
128 51	CORNED BEEF	6.08	2.33	613	119	16.26	451	61.81	165	22.54
129 53	BAKED FRANKFURTERS W/ SAUERKRAUT	6.06	2.56	603	126	17.28	442	60.63	167	22.91
130 118	FRIJOLE SALAD	6.03	2.69	339	371	52.25	276	38.87	160	22.54
131 67	BAKED TUNA AND NOODLES	6.03	2.42	590	144	19.62	425	57.90	179	24.39
132 164	PINEAPPLE PIE	6.02	2.51	601	110	15.47	425	59.77	163	22.93
133 64	CORNED BEEF HASH	5.97	2.45	582	152	20.71	422	57.49	184	25.07
134 66	REFRIED BEANS	5.95	2.52	565	169	23.02	383	52.18	209	28.47
135 32	TOMATO JUICE	5.95	2.60	469	59	8.10	558	76.65	85	11.68
136 80	COTTAGE CHEESE	5.93	2.87	641	89	12.19	508	69.59	117	16.03
137 127	BLACK EYE PEAS	5.88	2.71	596	119	16.64	427	59.72	167	23.36
138 97	LIMA BEANS	5.85	2.62	657	62	8.62	483	67.18	158	21.97
139 114	TUNA POT PIE	5.56	2.54	560	164	22.65	381	52.62	205	28.31
140 109	FRUIT YOGURT	5.54	2.96	553	166	23.09	392	54.52	182	25.31
141 120	SKIMMED MILK	5.16	2.74	581	139	19.31	376	52.22	222	30.83
142 89	INSTANT COFFEE	5.03	2.85	624	98	13.57	418	57.89	198	27.42
143 129	LOW CALORIE SODA	5.03	2.90	590	127	17.71	404	56.35	190	26.50
144 172	BUTTERED ERMAL	4.91	2.54	116	594	83.66	136	19.15	173	24.37
145 33	FUNISTRADA	4.40	2.43	101	624	85.07	122	16.83	155	21.38
146 71	PLAIN YOGURT	4.38	2.76	523	210	28.65	301	41.06	258	35.20

SCRIPT PRINTS

APPENDIX D

LCF FOOD RATING SHEET

MOISTEN TO SEAL

Fold Here

**DEPARTMENT OF THE ARMY
U.S. Army Natick Research and Development Command
Natick, MA 01760**

**Official Business
Penalty for Private Use, \$300**

**POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DoD-914**



COMMANDER

**U.S. Army Natick Research & Development Command
ATTN: DRDNA-YBF
Natick, MA 01760**

LCF FOOD RATING SHEET

Fold Here First

LCF FOOD RATING SHEET

Date: _____

Your system planners need to know what is good and what is bad about foil pack foods. After eating, you may express your opinion of as many as 3 different foods on this ballot. If you ate more than 3 foil pack foods, simply fill in part of another ballot. To keep your opinions confidential, refold this sheet, seal, and drop in any mailbox at your convenience.

PLEASE PROVIDE THE FOLLOWING INFORMATION

Write in Your Base: _____; LCF Where You Are Now _____
 Check Your Job: Combat Crew ☐; Manager ☐; Security ☐; Maintenance ☐; Cook ☐; Other ☐ _____
 Check the Mealtime: Breakfast ☐; Lunch ☐; Supper ☐; Late Supper ☐; Other ☐ _____

Write in the NAME OF the food you are rating _____; Menu No., if known _____ (10-11)
 For each of these characteristics, check box that best expresses your opinion.

Temperature (12)

Much Too Hot	<input type="checkbox"/>
Too Hot	<input type="checkbox"/>
Slightly Too Hot	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Cold	<input type="checkbox"/>
Too Cold	<input type="checkbox"/>
Much Too Cold	<input type="checkbox"/>
Comments:	

Flavor (13)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

Portion Size (14)

Much Too Big	<input type="checkbox"/>
Too Big	<input type="checkbox"/>
Slightly Too Big	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Small	<input type="checkbox"/>
Too Small	<input type="checkbox"/>
Much Too Small	<input type="checkbox"/>
Comments:	

Texture (15)

Very Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Very Good	<input type="checkbox"/>
Comments:	

Overall Opinion (16)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

Food Name _____; Menu No., if known _____ (20-21)

Temperature (22)

Much Too Hot	<input type="checkbox"/>
Too Hot	<input type="checkbox"/>
Slightly Too Hot	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Cold	<input type="checkbox"/>
Too Cold	<input type="checkbox"/>
Much Too Cold	<input type="checkbox"/>
Comments:	

Flavor (23)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

Portion Size (24)

Much Too Big	<input type="checkbox"/>
Too Big	<input type="checkbox"/>
Slightly Too Big	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Small	<input type="checkbox"/>
Too Small	<input type="checkbox"/>
Much Too Small	<input type="checkbox"/>
Comments:	

Texture (25)

Very Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Very Good	<input type="checkbox"/>
Comments:	

Overall Opinion (26)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

Food Name _____; Menu No., if known _____ (30-31)

Temperature (32)

Much Too Hot	<input type="checkbox"/>
Too Hot	<input type="checkbox"/>
Slightly Too Hot	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Cold	<input type="checkbox"/>
Too Cold	<input type="checkbox"/>
Much Too Cold	<input type="checkbox"/>
Comments:	

Flavor (33)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

Portion Size (34)

Much Too Big	<input type="checkbox"/>
Too Big	<input type="checkbox"/>
Slightly Too Big	<input type="checkbox"/>
Just Right	<input type="checkbox"/>
Slightly Too Small	<input type="checkbox"/>
Too Small	<input type="checkbox"/>
Much Too Small	<input type="checkbox"/>
Comments:	

Texture (35)

Very Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Very Good	<input type="checkbox"/>
Comments:	

Overall Opinion (36)

Very Good	<input type="checkbox"/>
Good	<input type="checkbox"/>
Slightly Good	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Slightly Bad	<input type="checkbox"/>
Bad	<input type="checkbox"/>
Very Bad	<input type="checkbox"/>
Comments:	

APPENDIX E
FOIL PACK FOOD RATINGS

TABLE E-1. Foil Pack Food Ratings, Three Air Bases, Spring 1978*

Food	Food	Number of Ratings	Temperature	Flavor	Portion Size	Texture	Overall Opinion
<u>Entrees:</u>							
	Fried Chicken	52	3.8 \pm 0.6	4.7 \pm 1.7	3.2 \pm 0.9	4.2 \pm 1.9	4.5 \pm 1.9
	Country Style Steak	44	3.8 \pm 0.5	4.3 \pm 1.9	3.1 \pm 1.0	4.1 \pm 2.0	4.1 \pm 2.0
	Roast Beef with Gravy	40	3.8 \pm 0.5	4.9 \pm 1.4	3.6 \pm 0.7	4.3 \pm 1.8	4.7 \pm 1.6
	Breaded Pork Chops	27	3.9 \pm 0.4	4.3 \pm 1.9	2.9 \pm 1.2	3.9 \pm 1.8	4.2 \pm 1.9
	Meatloaf with Gravy	25	3.9 \pm 0.6	4.3 \pm 1.9	3.2 \pm 1.2	4.4 \pm 1.8	4.6 \pm 1.6
	Barbecued Chicken	24	4.0 \pm 0.6	5.0 \pm 1.3	3.2 \pm 0.8	4.9 \pm 1.5	4.6 \pm 1.4
	Maryland Fried Chicken	24	3.8 \pm 0.4	4.2 \pm 1.5	3.2 \pm 0.8	3.8 \pm 1.5	4.3 \pm 1.6
	Swiss Steak	23	3.9 \pm 0.3	4.9 \pm 1.7	3.6 \pm 0.7	4.1 \pm 1.6	4.8 \pm 1.6
	Barbecued Pork	21	4.0 \pm 0.2	4.8 \pm 1.6	3.3 \pm 0.8	4.4 \pm 1.5	4.3 \pm 1.9
	Roast Turkey with Gravy	19	3.7 \pm 0.6	5.2 \pm 1.5	3.4 \pm 0.8	4.3 \pm 1.5	4.6 \pm 1.6
	Salisbury Steak	19	3.6 \pm 0.7	4.4 \pm 1.8	3.7 \pm 0.7	4.2 \pm 1.4	4.4 \pm 1.8
	Barbecued Beef Patties	17	4.0 \pm 0.7	3.6 \pm 1.6	3.3 \pm 1.0	3.4 \pm 1.3	3.5 \pm 1.5
	Fried Fish Portion	17	3.4 \pm 0.6	3.6 \pm 1.5	2.6 \pm 1.2	3.8 \pm 1.9	3.4 \pm 1.4
	Spaghetti with Meat Sauce	14	3.9 \pm 0.5	3.9 \pm 2.0	3.5 \pm 0.9	3.4 \pm 1.9	4.0 \pm 1.5
	Chili with Beans	10	3.8 \pm 0.9	4.1 \pm 2.0	2.9 \pm 1.0	4.1 \pm 1.9	3.4 \pm 2.0
<u>Starches:</u>							
	Mashed Potatoes	67	3.8 \pm 0.7	4.1 \pm 1.7	3.3 \pm 1.0	3.8 \pm 1.7	4.2 \pm 1.8
	Macaroni and Cheese	42	3.9 \pm 0.8	3.7 \pm 2.1	3.2 \pm 1.1	3.4 \pm 1.9	3.7 \pm 2.1
	Buttered Rice	30	3.9 \pm 0.5	3.9 \pm 2.0	3.2 \pm 1.0	3.8 \pm 2.2	4.0 \pm 2.0
	AuGratin Potatoes	29	3.7 \pm 0.5	3.8 \pm 1.7	3.0 \pm 1.1	3.9 \pm 1.5	3.8 \pm 1.5
	Buttered Potatoes	19	3.8 \pm 0.4	4.5 \pm 1.9	4.0 \pm 0.3	4.2 \pm 1.9	4.7 \pm 1.9
	O'Brien Potatoes	11	3.8 \pm 0.6	4.8 \pm 1.7	3.8 \pm 0.4	4.5 \pm 1.8	4.6 \pm 1.7
	Candied Sweet Potatoes	11	4.1 \pm 0.5	4.3 \pm 1.7	3.2 \pm 0.6	4.2 \pm 1.7	4.3 \pm 2.0
<u>Vegetables:</u>							
	Corn	96	3.9 \pm 0.5	5.2 \pm 1.5	3.5 \pm 0.9	4.9 \pm 1.6	5.2 \pm 1.5
	Green Beans	48	3.8 \pm 0.6	4.0 \pm 1.9	3.6 \pm 0.8	3.7 \pm 1.8	3.9 \pm 1.9
	Peas	23	4.0 \pm 0.6	4.8 \pm 1.7	3.8 \pm 0.4	4.9 \pm 1.9	4.7 \pm 1.5
	Peas and Carrots	23	3.8 \pm 0.5	4.6 \pm 1.9	3.7 \pm 0.8	4.7 \pm 1.9	4.6 \pm 1.9
	Boston Baked Beans	15	3.9 \pm 0.7	4.6 \pm 2.2	3.2 \pm 1.1	4.3 \pm 2.2	4.7 \pm 2.2
<u>Desserts:</u>							
	Chocolate Cake	28	3.9 \pm 0.6	5.5 \pm 1.5	2.8 \pm 1.4	4.9 \pm 1.7	5.3 \pm 1.7
	Apple Pie	21	4.0 \pm 0.4	4.8 \pm 1.2	3.2 \pm 1.0	4.9 \pm 1.1	4.5 \pm 1.1
	Vanilla Cake	11	3.9 \pm 0.3	5.2 \pm 1.1	3.0 \pm 0.7	4.5 \pm 1.6	5.1 \pm 1.4
	Apple Pie	11	4.1 \pm 0.5	5.4 \pm 1.9	3.1 \pm 0.8	5.0 \pm 1.9	5.2 \pm 1.8

For ease and scoring, consult Appendix D (LCF Food Rating Sheet). Texture is reversed to go in same direction as Flavor and Overall Opinion. The higher the mean, the better the texture.

TABLE E-2. Acceptability Ratings, All Foil Pack Foods^a

<u>Tabulated By</u>	<u>No.</u> ^b	<u>Temperature</u>	<u>Flavor</u>	<u>Portion Size</u>	<u>Texture</u> ^c	<u>Overall Opinion</u>
All Consumers	979	3.8±0.6	4.5±1.8	3.3±0.8	4.2±1.8	4.4±1.8
Job Group						
Combat Crew	243	3.6±0.7	4.7±1.6	3.6±0.8	4.3±1.6	4.6±1.6
Facility Manager	98	3.9±0.3	4.7±2.1	3.4±0.9	4.4±2.1	4.7±2.0
Security Police	465	3.9±0.6	4.2±1.8	3.2±1.0	4.0±1.8	4.1±1.8
Cook	94	4.0±0.4	4.6±1.6	3.2±0.9	4.1±1.6	4.6±1.5

^aConsult Appendix D (LCF Food Rating Sheet) for scales and scoring.

^bNumbers in each job group do not total 979. Because of small numbers of responses, ratings by consumers in miscellaneous job groups are not presented.

^cTexture scale has been reversed to go in the same direction as the Flavor and Overall Opinion scales, i.e., the higher the mean, the better the Texture.

TABLE E-3 SEPTEMBER 1978 FOIL PACK BREAKFAST ITEM TEST, F.E. WARREN AFB *

ITEM	Number of Responses	Characteristics Rated				Overall Opinion
		Serving Temperature	Flavor	Portion Size	Texture	
Scrambled Eggs	25	3.8±0.7	3.5±2.0	3.9±1.0	3.4±2.0	3.2±2.1
Ham & Cheese Omelet	65	3.6±0.7	3.2±1.7	3.8±0.6	3.4±1.4	3.0±1.7
Pancakes	28	3.7±0.6	4.5±1.5	3.5±0.7	3.6±1.4	3.9±1.6
French Toast	46	3.6±0.8	4.1±1.9	3.7±0.8	3.4±1.7	3.5±1.9

* See the LCF Rating Form. Appendix D, for scales and scoring. The Texture scale has been reversed so that it is scored in the same direction as the Flavor and Overall Opinion scales.